THE MARINE REVIEW

VOL. 38. CLEVELAND, NOVEMBER 26, 1908. NEW YORK No. 22

## GERMAN VERSUS ENGLISH SHIP BUILDERS.

The marvelously rapid growth of the ship building industry in Germany has been graphically demonstrated again in the past few weeks, by the transfer of the Russian order for five warships from Clyde ship builders to the Schichau yards at Danzig, Germany.

That this has created much discussion among those interested in the future of British ship building goes without saying and a correspondent of the *Newcastle Chronicle* points out that Germany has become the most serious competitor England has in Europe, not only in the field of ship construction, but in many other respects as well, having taken a large slice of England's business in many markets which had hitherto been regarded as monopolies. Continuing, this correspondent says:

"If we take the records of the years between 1894 and 1899 we find that the average yearly tonnage launched from German ship yards amounted to 130,000; prior to this there was no ship building in the country worth mentioning. Contrast this period with the one immediately following it from 1899 to 1904, in which the annual output of the German yards had increased to 206,000 tons. This naturally has led to a steady increase in the capital invested in German ship building yards. Between the years 1899 and 1905 the amount of working capital rose from £5,500,000 to £9,000.000—a rise of something like 60 per cent. These figures placed alongside England's record during the same period afford us something to think about. While Germany was fast gaining her hold on the world's market, England was fast losing ground. The average yearly tonnage of foreign orders secured by England between 1899 and 1905 went down from 79 to 61 per cent.

"Another point of equal importance to us is that during the latter period German ship builders have succeeded in making themselves practically independent of all foreign markets. Whereas in the year 1889 as much as 27.2 per cent of the raw material employed in German ship building was imported from abroad, much of it from England, this amount dwindled rapidly down, until in 1903 no more than 2.5 per cent was imported, and the statistics of today mostly prove that the import of raw material is practically nil.

"What this means to our industry may be gathered from the astounding revelation that Germany has entirely reversed the old order of things and is annually exporting more raw material, iron and steel, than we export in the same time—more than six times as much as she exported not more than 17 years ago. Here are the figures, which speak for themselves: Between 1876 and 1880 Germany's average export of raw iron was 2,140,000 tons, and England's average export was 6,660.000 tons. In the years between 1896 and 1900 England's average exports increased by 2,000.000, compared with an increase of 5,000,000 in Germany. This record has been more than doubled in the years between 1900 and 1907, leaving England far behind. The actual figures for 1907 are: England, 10,083,000 tons; Germany, 12,875,000 tons. This is the more astonishing when we remember that at the beginning of the eighties it was generally accepted, both in England and Germany, that it was an utter impossibility for the latter ever to dream of overtaking England!

"Surely something is wrong somewhere. We can understand that Germany, a comparatively new industrial state, should show a larger annual increase in her foreign trade than most of the older states with whom she has entered into competition, and who have long ago established their standards. But it is difficult for us to understand how in the course of seven years she has been able to leave her greatest competitor in Europe far behind. That no further back than in the eighties only 25 lb. of iron per head of the population was worked in Germany, and that this, with a very considerably increased population, should rise to 282 lb. per head in 1902, reads almost like some fairy tale. That Germany, which once imported all her machinery, should now be sending to us exactly as much as we send to her, that in the year 1905 she should send to us 52.3 of her ironmongery manufactures, accepting from us a paltry 14.9 per cent of our ironmongery manufactures is surely a problem to be solved. It would be interesting to know exactly what influence this has had on the present crisis in the ship building and iron industries in England, and how far it may be responsible for the existing conditions."

## EIGHT BATTLESHIPS AT AMOY.

That the pride of the Chinese people might not be offended by the appearance at Amoy of but eight of the vessels of the American battleship fleet—whereas the entire 16 participated in the welcome in Japan—the official Chinese newspaper, controlled by Grand Councilor Yuan Shai Kai, has announced that owing to a storm the other half of the fleet became separated on its way to the Chinese coast and that the where-

Generated on 2024-08-28 16:21 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

abouts of those vessels were unknown. Amoy is a somewhat isolated port and owing to the lack of proper communication the particulars of the entertainment are only now appearing in the native press. Prince Yung Lang represented the throne at the festivities at Amoy.

## BOOK REVIEWS.

**Ex-Meridian Tables.** By Lieut. Commander Armistead Rust. 393 pages, 6 x 9 in. John Wiley & Co., New York, publishers. Price, $5.00.

In this book the author has followed the arrangement of ordinary azimuth tables as that most convenient to navigators. As the work is not intended as a text book, he has not taken up space with rules for the conversion of time finding hour angles and plotting lines of position by the usual methods familiar to navigators, as these may be found in any work on navigation. The book gives new and practical methods for identifying stars in cloudy weather. A few examples have been worked to illustrate the use of the various tables and diagrams. Infinite labor has been placed upon this work and it deserves to be in the library of every navigator.

**Hydraulics.** By S. Dunkerley. 253 pages, 5 x 8½ in. Longsman, Green & Co., New York, publishers. Price $3.00.

This is the second volume on hydraulics and is devoted to the resistance and propulsion of ships. The work is divided into six divisions: Stream lines, waves, resistance of ships, eddy, skin and wave making resistance, wave making resistance, trial of full sized ships, theoretical consideration effecting the propulsion of ships.

**Nautical Charts.** By G. R. Putnam. 162 pages, 5½ x 9 in. John Wiley & Sons, New York, publishers. Price, $2.00.

This book is an outgrowth of the preparation of a lecture on charts for Columbia University. In getting together his material, Mr. Putnam was greatly impressed by the fact that although nautical charts are discussed in many publications, there was not found any one which covered the general subject of their origin, construction and use. He has intentionally made his book as non-technical as possible. Mr. Putnam's book is distinctly useful and is an excellent compilation of information which could not be obtained except by a thorough search of more than a score of publications.

**Definitions in Navigation and Nautical Astronomy.** By P. Groves Showell. 107 pages, 5 x 7 in. J. P. Lippincott & Co., Philadelphia, publishers.

This work is intended for the junior grades of the nautical profession. It gives the terms and definition in common use in the sciences of navigation and nautical astronomy. The work will be found especially helpful to students about to present themselves for their first examinations. At the end of the book will be found various tables of weights and measures, and also formulae used in determining areas and volumes. The various instruments used in navigation are also illustrated and described.

**The Temperature-Entropy Diagram.** By Charles W. Berry. Second edition, 317 pages, 5 x 7 in. Price, $2.00. John Wiley & Sons, New York.

The scope of the new edition is told in the preface as follows:

"In the revised edition of the Temperature-Entropy Diagram a more extended application of the principles of the $T\phi$-analysis to advanced problems of thermo-dynamics has been made than was possible in the limited scope of the previous edition. The chapter on the Flow of Fluids has been entirely rewritten and treats at length various irreversible processes. A graphical method of projecting from the $pv$- into the $T\phi$-plane has been elaborated for perfect gases and its application illustrated in the chapters on hot air engines and gas engines. The various factors affecting the cylinder efficiency of both gas and steam engines have been thoroughly discussed. One chapter has been devoted to the thermodynamics of mixtures of gases and vapors, and another to the description and use of Mollier's total energy-entropy diagram."

**The Mechanical Engineering of Steam Power Plants,** by Frederic Rensen Hutton; third edition; 825 pages, 6 x 9 in.; price, $5. John Wiley & Sons, New York.

This work was originally issued in 1897, but development has been so rapid during the past decade that this, the third edition, has been entirely rewritten. Obviously the subject is a large one, for the power plant enters, in one way or another, into the life of everyone. The new treatments which are especially noteworthy are those of the analysis of the power plant and its diagram and the separation between the simple and complex frame of this problem; the treatment of the steam pipe as an element of co-ordinate importance in the plant with the boiler and the engine; the chapters on the auxiliaries as distinguished from the essentials; the steam turbine chapter; the engine mechanism chapter and the establishment of the philosophy of the expansion of the elastic medium of the basis of the valve gear, the governor and the condensing and compounding engine.

Data and tables have been used quite sparingly as the author prefers that students should acquire the habit of going to the engineer's pocket books for quantitative information. While the book is intended as a text book in schools of engineering, it will also appeal to power plant owners, power plant operators, power plant contractors, and the large field of mechanical engineers. Concerning the problem as to whether the steam turbine or the internal combustion motor will displace the reciprocating engine, the author apparently holds that the end of the reciprocating engine is not yet.

**Progressive Pennsylvania by James M. Swank.** 6½ x 9½ in. 360 pages. James M. Swank, 261 South Fourth street, Philadelphia. Price, $5.00.

James M. Swank, general manager of the American Iron & Steel Association, has just published a book entitled "Progressive Pennsylvania." In writing this work Mr. Swank has done a real service to the state because he has preserved imperishably much valuable information that otherwise might have been lost. The task of the historian is no easy one. Mr. Swank's latest book is one that has involved prodigious labor, and he has done it creditably and thoroughly. To be sure he has been greatly aided in the preparation of this work by his intimate association with Pennsylvania over a long life and the advantage of his previous standard works, notably "Iron in All Ages," but nevertheless it has required ceaseless activity and unflagging devotion to produce such a book as this.

It is, as he says, Mr. Swank's final contribution to the industrial history of America and particularly of Pennsylvania. In order that the work might have the necessary perspective he presents a number of leading incidents in the early history of Pennsylvania. The incidents which he presents are little known, but they are introduced because they are worthy of greater emphasis than they have received.

Pennsylvania as a state has been careless of its fame. It has produced many distinguished men but it has honored none of them. Who, for instance, knows anything of the Pennsylvania ancestry of Lincoln and Grant? What is there in the commonwealth of Pennsylvania to recall Valley Forge and Gettysburg, both intimately associated with Pennsylvania's history? Yet one marks the crisis of the American Revolution and

Generated on 2024-08-28 16:16 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

the other the downfall of the Southern Confederacy.

After touching upon the more important points of Pennsylvania's early history, Mr. Swank passes to that in which he has been for many years the acknowledged authority, the industrial history, the early means of transportation, flat boats, ferries, turnpikes, canals, steamboats and railroads, followed by several chapters dealing with the great productive industries of Pennsylvania.

The volume deals with exact statements and Mr. Swank is exact both by inclination and training. The book closes with a number of chapters that are devoted to biographical sketches of eminent Pennsylvanians. In this work Mr. Swank has builded for himself a monument that will entirely outlive any pile of mortar and stone.

## BLUE BOOK ON SUBMARINE CABLES.

The inter-departmental committee on injuries to submarine cables, in whose hands the British government placed the investigation of that subject which was begun in the United States by the New York chamber of commerce, has recently completed its report, which was issued in the form of a blue book. The injuries are supposed to have been made by British steam trawling vessels and a summary of the committee's recommendations, based upon this supposition, follows:

The committee are of opinion that injury is sometimes caused to submarine cables by otter boards of certain types and boards out of repair, and by beam trawls with defective trawl heads. They think that there would be little risk of injury from trawls of either kind if they were always suitably constructed and in good condition. They find that the owners of trawling vessels are generally willing, and indeed anxious, to modify their trawling gear with the view of minimizing the risk. They are not prepared to recommend the proscription of any area beyond territorial limits. They recommend that all cable companies should (as certain companies and the postoffice have already done) establish friendly relations with the fishermen who frequent the waters in which their cables are laid; while the fishermen on their part should try to clear their trawls when they foul a cable and should report the position of any contact with a cable.

They recommend that a system of government inspection of the gear of trawlers be at once instituted. They recommend that steps be taken through the diplomatic channel to invite neighboring foreign states to adopt a similar system of inspection. They think that eventually an international conference may be necessary to settle the terms of a convention on the subject. They recommend that the cable companies should consider the question of substituting heavier types of cable in the areas affected.

Sir J. C. Lamb, formerly second secretary to the postoffice, was chairman of the committee, and the other members were: W. R. Culley, submarine superintendent in the engineering department of the postoffice; Commander G. C. Frederick, R. N., professional member of the harbor department of the board of trade; C. E. Fryer, superintending inspector of English fisheries; W. S. Green, chief inspector of Irish fisheries, and Commander G. M. Marston, R. N., of the hydrographic department of the admiralty.

## WOOD AS BUILDING MATERIAL.

Great as the advance in fire-proof construction has been during the last ten years, there has been no let-up in the use of lumber, and both architects and builders find themselves so dependent on wood today that they are compelled to admit that the forests of the country are likely to be the chief source of building material for many years to come.

"The use of cement, terra cotta, brick and stone, with a framework of steel, will make it possible soon to do away with wood entirely," is a remark often heard, and, indeed, when one stands on lower Broadway and looks up at the towering skyscrapers, the statement seems to contain much truth. As a matter of fact, however, the popular idea that fire-proof materials will do away with the need of using lumber in a comparatively few years is a very erroneous one. All of the various fire-proof materials going into the approved construction of the more substantial buildings are used in greater quantities now than the world dreamed of a few years ago, yet the heavy demand for lumber continues.

That wood predominates is shown by the annual building records. Of the permits used for buildings erected last year, approximately 61 per cent were constructed of wood, and the remaining 39 per cent of fire resisting material, according to a report issued by the Geological Survey on operations in 49 leading cities of the country. These figures are the more significant when it is realized that they only represent the building activities in the largest cities; they do not take into account the construction of dwellings, stores and other buildings in the thousands of small cities and towns scattered over and not included in the 49 cities on which the reckoning is made.

In towns and small cities wood is usually the predominating building material, and it is safe to say that if the statistics had included figures for all places of whatever size, the percentage of wooden construction would have been much greater. These figures, as a rule, are only for the corporate limits, and the suburbs of these cities have each very large amounts to be added. The cost, also, is relatively higher in these cities than in towns nearer the base of the supply.

## ROACH SHIP YARD PLACED IN HANDS OF RECEIVER.

Upon the application of the executors of the estate of John B. Roach, a receiver was named Nov. 12 for the Delaware River Iron Ship Building & Engine Works, at Chester, Pa., known as Roach's ship yards. William I. Schaffer was named receiver with $50,000 bond. Beside a mortgage of $100,000, the company owes the Roach estate $250,000 for money advanced, $100,000 for endorsements, the other debts aggregating about $180,000. The yards were established before the war by Reany, Son & Archibold and were purchased by John Roach in 1871, who conducted it until 1885 when he got into difficulties with Secretary of the Navy Whitney. After the death of the elder Roach, his son John B. Roach took over the yards and conducted them with varying success until his death last June.

Requests for plans and specifications received at the navy department indicate that it is not likely that any ship building firm on the Pacific coast will seek the contract for the new battleship which is to be a sister ship of the one to be built at the New York navy yard. It is predicted that the bids will be very close owing to the need of the Atlantic ship yards for work. Bidders will be permitted to submit their own plans, although it is probable that the officials will adhere to the departmental design in order to make the Florida and Utah duplicate ships in all essential particulars.

Generated on 2024-08-28 16:18 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

## SHIP YARD NOTES.

Percy & Small, Bath, Me., launched the large five-masted schooner Fuller Palmer, Nov. 10. The schooner went overboard with all sails bent and ready for sea.

The New London Marine Iron Works, New London, Conn., have been awarded a contract for repairing the government steamer Gen. Nathaniel Greene, at a cost of $726.50.

All bids submitted for the construction of a new Hudson river day line steamer to replace the New York, recently destroyed by fire, have been discarded and a new proposition is to be presented to the builders.

James Rees & Sons, Pittsburg, Pa., have been awarded a contract for building two freight and passenger steamers, to be shipped in "knock-down" condition to South America. Work is to begin on them at once.

The Willamette Iron Works, Portland, Ore., are to launch the steamer H. B. Kennedy Nov. 21. This vessel is to be one of the finest passenger vessels on Puget Sound. She is to ply between Seattle, Port Orchard and Bremerton.

R. Moulton, Burgeo, Newfoundland, recently launched a three-masted schooner of 130 tons, built of oak, the major part of which came from the wreck of the American schooner Golden Rod, which was refloated and broken up.

The Harlan & Hollingsworth Corp., Wilmington, Del., launched the steamer Easton for the Central Railroad of New Jersey, Nov. 9. The Easton is the second of four steel freight steamers being built at this yard for the railroad company.

Crawford & Reid, Tacoma, Wash., have completed repairs to the fishing schooner Ida May, which was rammed by the steamer Princess Victoria last month. After having a new motor installed at Seattle she will again engage in the halibut trade.

T. S. Marvel, Newburgh, N. Y., is overhauling the steam yacht Elsa, recently purchased by Capt. John P. Roberts, of New York. She is to be so altered that she will be suitable for any part of the New York excursion trade.

The Moran Co., Seattle, Wash., is to make repairs to the American barkentine Good News, which recently arrived on the Sound minus a great part of her rigging, having made a large part of her voyage from the Delaware river in that condition.

The Tampa Foundry & Machinery Co., Tampa, Fla., launched the first of the dredges which it is to build for the state of Florida, last week. The vessel, which was christened Miami, will be used in the work of reclaiming the Everglades. She is 300 ft. long, 40 ft. beam, and has a draught of 7 ft. aft and 5 ft. 6 in. forward.

Kelly-Spear & Co., Bath, Me., have recently closed a contract with the Commercial Towboat Co., of Boston, Mass., for the construction of a seagoing wooden towboat to be 138.9 ft. long, 26,6 ft. wide and 15.11 ft. deep. She will be fitted with triple-expansion engines of about 700 H. P. They will be built by the Bath Iron Works.

After Dec. 1 skippers homeward bound across the Atlantic will no longer be greeted by the Sandy Hook lightship as on that date the present familiar brick red vessel will be supplanted by a new yellow one on which will be stenciled "87 Ambrose Channel 87". The present lightship has been stationed off the Hook about 16 years and the cognomen of "Sandy Hook lightship" has been in use for about 50 years.

The John N. Robins Co., Erie Basin dry docks, Brooklyn, N. Y., was recently awarded a contract for making extensive repairs to the Belfast steamer Malin Head which collided with and was sunk by the Californian in the St. Lawrence river. The Malin Head was raised and brought to New York by the London Salvage Association after she had been abandoned by the underwriters. The salvage operations were under the immediate supervision of Capt. William H. H. Logan, who has an enviable reputation as a salvor.

E. L. Bean, Camden, Me., has the frames in position for a schooner which he is to build this winter.

Booz Bros., Baltimore, Md., are giving the revenue cutter Apache a thorough overhauling prior to going on her winter service in the bay.

A schooner named Watauga was launched at Lunenburg, Nova Scotia, recently. She is of 99 tons register, 116 ft. in length over all, 25 ft. 8 in. beam, and 10 ft. 8 in. depth of hold.

The Chesapeake Marine Railway Co., Baltimore, Md., is building a lighter for Baltimore owners. It is to be 60 ft. long, 20 ft. wide and 5 ft. deep.

Joseph McGill, Shelburne, Nova Scotia, launched the steamer Hugh D. recently. The vessel was built to the order of Hugh Cann & Son, of Yarmouth, N. S., for use in towing and freighting. She is 88 ft. long, 18 ft.

## SUMMARY OF NAVAL CONSTRUCTION.

The monthly summary of naval construction, issued by the bureau of construction and repair, shows the following progress upon vessels:

| Name of Vessel. | Building at— | —1908— Per Cent of Completion. Oct. 1. | Nov. 1. |
|---|---|---|---|
| **BATTLESHIPS.** | | | |
| South Carolina | Wm. Cramp & Sons | 63.2 | 65.9 |
| Michigan | New York S. B. Co. | 71.4 | 74.9 |
| Delaware | Newport News S. B. Co. | 44.2 | 50.3 |
| North Dakota | Fore River S. B. Co. | 54.2 | 58.8 |
| **TORPEDO BOAT DESTROYERS.** | | | |
| Smith | Wm. Cramp & Sons | 35.8 | 57.5 |
| Lamson | Wm. Cramp & Sons | 52.1 | 56.2 |
| Preston | New York S. B. Co. | 49.1 | 52.0 |
| Flusser | Bath Iron Works | 26.1 | 33.0 |
| Reid | Bath Iron Works | 26.0 | 31.6 |
| Paulding | Bath Iron Works | .... | 0.0 |
| Drayton | Bath Iron Works | .... | 0.0 |
| Roe | Newport News S. B. Co. | .... | 0.0 |
| Terry | Newport News S. B. Co. | (No report) | |
| Perkins | Fore River S. B. Co. | " " | |
| Sterrett | Fore River S. B. Co. | " " | |
| McCall | New York S. B. Co. | .... | 0.0 |
| Burrows | New York S. B. Co. | .... | 0.0 |
| Warrington | Wm. Cramp & Sons | (No report) | |
| Mayrant | Wm. Cramp & Sons | " " | |
| **SUBMARINE TORPEDO BOATS.** | | | |
| Stingray | Fore River S. B. Co. | 58.7 | 62.3 |
| Tarpon | Fore River S. B. Co. | 57.3 | 60.3 |
| Bonita | Fore River S. B. Co. | 55.5 | 57.8 |
| Snapper | Fore River S. B. Co. | 55.7 | 56.5 |
| Narwhal | Fore River S. B. Co. | 50.9 | 52.3 |
| Grayling | Fore River S. B. Co. | 50.7 | 52.0 |
| Salmon | Fore River S. B. Co. | 50.3 | 51.3 |
| **COLLIERS.** | | | |
| Vestal | Navy Yard, New York | 96.2 | 97.6 |
| Prometheus | Navy Yard, Mare Island | 82.7 | 87.8 |
| **TUG BOATS.** | | | |
| Patapsco | Navy Yard, Portsmouth | 79.0 | 81.0 |
| Patuxent | Navy Yard, Norfolk | 95.0 | 95.0 |

Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

beam and 8 ft. depth of hold. A schooner is also under construction at the McGill yard which is to be launched early in December. She was designed by McManus, of Boston, for a syndicate of Lunenburg owners and is to engage in the West India trade. This vessel is 100 ft. long, 24 ft. beam and 9 ft. 8 in. depth of hold.

Mr. George Walker, formerly of Aberdeen, Wash., a well-known ship builder, is about to establish a ship yard at Toledo, Ore., on Yaquima Bay. A site for the plant and a bonus have been granted by the citizens of that town under the condition that at least one vessel be built each year. Two orders have already been obtained, one for a steam schooner and another for a deep sea fishing vessel. The steam schooner is to be built for Mr. Walker and Frank Coffee, of Portland, Ore. She will be 120 ft. long, 26 ft. beam, and 17 ft. draught, and is to have a speed of nine knots. Her capacity will be 200 tons of cargo and 100 passengers. She will engage in the coastwise trade. The fishing schooner will be fitted with auxiliary power and is to be 45 ft. in length, 14 ft. beam, and 6 ft. depth of hold. She is to the order of Chambers Bros., of Newport, Ore.

M. Alfred Picard, who was director general of the Paris Exposition of 1900, has been offered the folio of French minister of marine, to succeed Gaston Thomson, who resigned recently as the result of a vote in the chamber of deputies deploring the negligence in his department indicated by the blowing up of the battleship Iena and other severe accidents to the French navy.

## BUYS DRY DOCKS.

San Francisco, Nov. 14.—President Charles M. Schwab, of the Bethlehem Steel Co., which controls the Union Iron Works of this city, announced while on a recent trip to this city, that the Bethlehem company has purchased the controlling interest in the San Francisco Dry Dock Co. This dry dock company owns two big dry docks at Hunter's Point, within San Francisco bay, as well as several floating docks for small vessels. Mr. Schwab added that the docks will be combined with the Union plant in a repair establishment capable of handling marine work of any magnitude and of docking any ship afloat in the Pacific ocean. He would make no statement as to the financial amount involved nor as to whether the company will now bid for the construction of government vessels. He did say, however, that "this combination deals more with repair work than construction."

The shorter work-day for the iron trades will become effective Dec. 1, when the iron workers will work 8¾ hours and receive the same pay they are receiving for nine hours' work. The lopping off of 15 minutes is to continue at intervals of six months until the eight-hour day shall be established, without reducing the wages. As far as can be learned, the employers will carry out the terms of the agreement entered into 18 months ago, and the cordial relations existing between employer and employe will not be disturbed.

E. J. Fowler, president of the California Metal Trades Association, in an address to the members pictures the outlook as rosy. Secretary Harry F. Davis enumerates work in sight for San Francisco shops. Among the list he mentions contracts for iron which the municipality will have to place in the near future as the following items: 50,000 tons of pipe, 8,000 tons of fittings, 4,000 tons of special fittings, 12,000 tons of hydrants, pumps, turbines, and a mass of other articles. The contract for two fire boats has been awarded to the Risdon Iron Works. And this merely a beginning of what will be required for the proposed fresh water and the auxiliary salt water supply system for the fire protection of San Francisco.

**Robert W. Hunt & Co., consulting and inspecting engineers, 1121 The Rookery, Chicago, Ill., have been awarded by the Chicago & Northwestern Railway Co., the inspection of the structural materials entering into their new terminal station, of which the steel will amount to about 24,000 tons. The same firm have been given the inspection of the steel to be used in the new Blackstone hotel now being erected at the corner of Michigan avenue and Hubbard court.**

## SHIP BUILDING IN THE UNITED STATES.

The bureau of navigation reports 319 sail and steam vessels of 20,887 gross tons built in the United States and officially numbered during September, as follows:

| | WOOD | | | | STEEL | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sail | | Steam | | Sail | | Steam | | | |
| | No | Gross | No. | Gross | No. | Gross | No. | Gross | No. | Gross |
| Atlantic and Gulf | 46 | 6,310 | 134 | 3,334 | .... | ..... | 5 | 5,160 | 185 | 14,804 |
| Porto Rico | 3 | 33 | .... | ..... | .... | ..... | .... | ..... | 3 | 33 |
| Pacific | 1 | 14 | 47 | 1,418 | .... | ..... | .... | ..... | 48 | 1,432 |
| Hawaii | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Great Lakes | .... | ..... | 28 | 407 | .... | ..... | 7 | 2,657 | 30 | 3 064 |
| Western Rivers | .... | ..... | 52 | 1.463 | .... | ..... | 1 | 91 | 53 | 1 554 |
| Total | 50 | 6 857 | 256 | 6,622 | .... | ..... | 13 | 7,908 | 319 | 20,887 |

During the corresponding quarter ended Sept. 30, 1907, 330 sail and steam vessels of 133,092 gross tons were built in the United States and officially numbered, as follows:

| | WOOD | | | | STEEL | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sail | | Steam | | Sail | | Steam | | | |
| | No. | Gross | No. | Gross | No | Gross | No. | Gross | No. | Gross |
| Atlantic and Gulf | 27 | 7,689 | 102 | 3.206 | 1 | 63 | 17 | 31,533 | 147 | 42,491 |
| Porto Rico | 1 | 7 | .... | ..... | .... | ..... | .... | ..... | 1 | 7 |
| Pacific | 5 | 1,677 | 65 | 8,358 | .... | ..... | 2 | 2,622 | 72 | 12,657 |
| Hawaii | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Great Lakes | 3 | 41 | 36 | 1,084 | .... | ..... | 17 | 75,830 | 25 | 76,955 |
| Western Rivers | .... | ..... | 54 | 982 | .... | ..... | .... | ..... | 54 | 982 |
| Total | 36 | 9,414 | 257 | 13,630 | 1 | 63 | 36 | 109,985 | 320 | 133,092 |

## SHIP BUILDING DURING OCTOBER.

The bureau of navigation reports 93 sail and steam vessels of 5,210 gross tons were built in the United States and officially numbered during October, 1908, as follows:

| | WOOD | | | | STEEL | | | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sail | | Steam | | Sail | | Steam | | | |
| | No. | Gross | No | Gross | No | Gross | No. | Gross | No | Gross |
| Atlantic and Gulf | 17 | 1 824 | 32 | 721 | .... | ..... | ... | ..... | 49 | 2,555 |
| Porto Rico | 1 | | .... | ..... | .... | ..... | .... | ..... | 1 | 9 |
| Pacific | 4 | 37 | 17 | 2,002 | .... | ..... | .... | ..... | 21 | 2.037 |
| Hawaii | .... | ..... | .... | ..... | .... | ..... | .... | ..... | .... | ..... |
| Great Lakes | .... | ..... | 8 | 1:2 | .... | ..... | 1 | 46 | 9 | 178 |
| Western Rivers | .... | ..... | 13 | 431 | .... | ..... | .... | ..... | 13 | 431 |
| Total | 22 | 1,878 | 70 | 3,286 | .... | ..... | 1 | 46 | 93 | 5,210 |

Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

## NEW ATLANTIC TRANSPORT LINER.

Harland & Wolff, the eminent ship builders on the Clyde, launched the Atlantic Transport liner Minnewaska, Nov. 12. The Minnewaska is a sister ship to the Minneapolis, Minnehaha and Minnetonka and is a handsome addition to the fleet of the Atlantic Transport Co. She has accommodations for 300 first-class passengers but no second or third class passengers are to be carried.

The state rooms are arranged on two decks, the lower of which is about 35 ft. above the water line. The passenger accommodations are in the center of the vessel. On the upper promenade deck forward there is a lounge with a large smoking room aft. On the same deck are reading and writing rooms. The dining saloon accommodates comfortably all the passengers, thus doing away with a second table in the rush seasons. A special feature is the number of single cabins and baths and the handsome suites of two or more rooms with baths for family use.

The length of the Minnewaska is 600.7 ft.; her width, 65.5 ft., and the depth, 39.7 ft. She has twin screws driven by quadruple engines, capable of maintaining a speed of 17 knots.

The Atlantic Transport line, since it has added the Minnewaska, will establish a service from New York to London direct within eight or nine days. The sailing day will be Saturday.

## GROWTH OF SIZE OF SHIPS.

The records for the Lake Superior & Ishpeming dock at Marquette illustrate in a graphic way the rapid growth in the size of ships on the great lakes in the past dozen years. In 1896, when the dock was operated but part of the season, 171 ships arrived and cleared from the Lake Superior & Ishpeming dock. In 1897, the first year that the dock was operated a full season, 553 ships took cargoes that averaged 1,866 tons. The figures for the succeeding years are as follows:

| Year. | No. ships. | Av. cargo, tons. |
|---|---|---|
| 1898 | 488 | 2,223 |
| 1899 | 563 | 2,431 |
| 1900 | 524 | 2,661 |
| 1901 | 511 | 2,991 |
| 1902 | 446 | 3,109 |
| 1903 | 353 | 3,112 |
| 1904 | 276 | 3,668 |
| 1905 | 460 | 4,197 |
| 1906 | 371 | 4,628 |
| 1907 | 331 | 5,107 |

This year to date 112 ships have cleared from the Lake Superior & Ishpeming docks, and their average cargo has been 6,646 tons. It will be seen that the type of ships on the great lakes has undergone a revolutionary change in the space of a dozen years.

## NEW CHART OF HOLLAND HARBOR AND BLACK LAKE.

A new chart of Holland Harbor and Black Lake, Lake Michigan, has just been completed by the U. S. Lake Survey Office.

This chart, on a scale of 1,250 feet (about ¼ mile) to the inch, shows the whole of Black lake and the topography bordering its shores, included in which is a plat of the city of Holland, at the head of the lake. Its limits also embraces the Lake Michigan shore line for 2½ miles north and 1½ miles south of the entrance piers, with adjacent topography and hydrography.

The chart is an engraved lithograph in colors, based on a special survey made by the Lake Survey in 1906. All subsequent changes in harbor improvements and aids to navigation have been incorporated, including the new breakwaters and range lights at the harbor entrance.

## IMPROVEMENT TO UPRIGHT BOILERS.

S. D. Brear of the Tacoma Steam Boiler Works has patented an improvement on the ordinary upright boiler which is said to increase the efficiency of the boiler considerably while at the same time saving fuel. The device consists of placing a casing around the ordinary boiler just above the firebox. It is air-tight with the flue placed on the bottom. Mr. Brear says that after a year and a half's use of this type of boiler in the operation of his steam boiler works he washed the boiler out and found only about half an inch of soft mud at the mud ring. These boilers can be used as auxiliaries between decks of steamers, as donkey boilers and as hot water heaters for houses.

## ITEMS OF GENERAL INTEREST.

The statement of the Pittsburg Coal Co. for nine months ended Sept. 30, 1908, compared with the same period of last year, shows a decrease of $2,100,573.21 in gross earnings, and $1,973,821.36 in net earnings.

Capt. J. B. Watt, of the Cunard liner Lusitania, made his last trip to New York last week. He will retire to his home in Scotland on the return of the Lusitania to Liverpool. Capt. Watt has been in the service of the Cunard company for more than 25 years. His place on the Lusitania will be taken by Capt. Pritchard, commander of the Mauretania, which is now being overhauled, but so soon as she shall again be placed in commission Capt. W. T. Turner, now commanding the Umbria and who is the senior officer after Capt. Pritchard, will assume command of the Lusitania.

Simon Lake, of the Lake Torpedo Boat Co., Bridgeport, Conn., has recently returned from abroad with contracts for the construction of six submarine torpedo boats, two of which are for Austria and four for Russia.

Advices from Genoa state that the attempt which was made in August last to right the steamer Principessa Jolanda was a failure, due it was surmised to the superstructures which are embedded in the sand. These are now being removed, when this has been effected, and it will take a long time, another attempt will be made. This vessel capsized after being launched.

The Kaiser Wilhelm II and the Kaiser Wilhelm der Grosse, which have seen continuous services of eight and one-half and seven and one-half years, respectively, as ships of the line in the German high sea fleet, are now out of commission and are to be completely modernized. Deck works are to be reduced and four casemate guns are to be removed. Consequent reduction of the weight of the equipment will give the ships a greater width of armor belt above the water line. The Kaiser Barbarossa has recently undergone a similar change and the Kaiser Frederich III is being rebuilt as well.

The proposed armament of the new Japanese battleships Satsuma and Aki is reported to have undergone considerable modification and is now to consist of the following: Main armament, 10 12-in. breech loading guns of 50 calibers; secondary armament, 24 quick fires, probably 10 6-in. and 14 7-in. This will make the main armament of these vessels equal to that of the British Dreadnought and the secondary armament will be superior. However, these Japanese ships are to have a greater displacement than the 25,000-ton pioneer British Dreadnought, reaching probably 30,000 tons. The Japanese Dreadnoughts in fact resemble more closely the new British Invincible, although what is to constitute her secondary armament has not yet been decided.

Generated on 2024-08-28 16:18 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

## QUESTIONS FOR MASTERS AND MATES.—No. 19.

280. What is the difference between magnetic variation and magnetic declination?

281. What term do nautical men use when they mean magnetic declination?

282. The true courses are: SSW; N by E ½ E; WSW and E by N, the Var. is 8° Ely. in each case, what are the corresponding correct magnetic courses?

283. The true courses are N 58° E; S 6° E; N 89° W and S 50° W, and the Var. in each case is ⅝ of a point Wly., what are the corresponding correct magnetic courses in each case?

284. The correct magnetic course is ENE ½ E, Var. 6° Wly., what is the true course?

285. Have steered NW by compass having no deviation; Var. at departure 5° Ely and at end of course 3° Ely. What is the mean true course made good?

286. Compass course is south, wind WSW, leeway ¾-pt., Var. 16° Ely., Dev. 14° Ely., what is the true course the ship has made?

287. The compass course is E ¾ S, wind S by E, leeway 1¼-pts., Var. 20° Wly., Dev. 15° Ely., what is the true course?

288. The compass course is WNW, wind north, leeway 3 points, Var. 14° Wly., Dev. 8° Wly., what is the true course?

289. What is meant by the course made good?

290. What is a compass bearing?

291. What corrections are to be made to a compass bearing to make a true bearing of it?

292. What is the correct magnetic bearing of Pipe and Frying Pan islands range?

293. What is the correct magnetic bearing of the Duluth piers?

294. What is the correct magnetic bearing of the Water Works Intake Crib light when in range with the light situated on the west breakwater at the entrance to Cleveland harbor?

## ANSWERS TO QUESTIONS FOR MASTERS AND MATES.—No. 19.

280. No difference.

281. Variation of the compass needle.

282. True course SSW Var. 8° or ¾-pt. Ely. C. M. C. S. 14° 30′ W or S x W ¼ W.

True course N x E ½ E 8° or ¾-pt. Ely. C. M. C. N 9′ E or N ¾ E.

True course WSW, Var. 8° or ¾-pt. Ely. C. M. C. S 59° 30′ W or SW x W ¼ W.

True course E x N, 8° or ¾-pt. C. M. C. N 70° 45′ E or ENE ¼ E.

283. True course N 58° E. Var. ⅝ pt. or 7 Wly. C. M. C. N. 65° E or NE x E ¾ E.

True course S 6° E Var. ⅝-pt. or 7 Wly. C. M. C. S 1° W or S ⅛ W.

True course N 89° W Var. ⅝-pt. or 7 Wly. C. M. C. N 82° W or W ¾ N.

True course S 50° W Var. ⅝-pt. or 7 Wly. C. M. C. S 57° W or SW x W.

284. True course, ENE.

285. N 1° W or NW ⅜ N.

286. Course corrected for leeway, S ¾ E, Dev. and Var. (same name) 30° or 2⅝ -pts. Ely. True course SSW ⅛ S.

287. Courses corrected for leeway E ½ N. Correction 5 or ½-pt. Wly. true course E x N.

288. True course SW x W.

289. The true course from starting point to place arrived at.

290. The direction of an object by compass.

291. Variation and deviation.

292. True bearing N ½ W Var. ⅜ Wly. C. M. bearing N ⅛ W.

(Lighthouse book gives the true bearing as N ½ W.)

293. SW x W ⅛ W. Correct magnetic bearing.

294. Correct magnetic bearing of Outer Crib NNW ⅝ W.

## REPORT OF CHIEF OF ENGINEERS.

Gen. William L. Marshall, Chief of Engineers, United States Army, in his first annual report, just submitted, makes a strong appeal for an increase to the corps of engineers. He says that the present authorized engineer corps consists of but 189 officers and he recommends an increase of 132 officers, 60 to be employed on military and civil works of construction, 57 to be employed in three additional battalions, and 15 for regimental organization.

Gen. Marshall submits estimates of appropriations for river and harbor work for the fiscal year ending June 30, 1910: Under continuing contracts, $20,479.057; rivers and harbors (general), including examinations, surveys and contingencies) $21,464,141; under California De Bries Commission, $15,000; prevention of deposits in New York harbor, $155,260; enlargement of Governor's Island, New York, $75,000. In addition to the above the Mississippi river commission submits an estimate amounting to $3,000,000, reduced by the chief of engineers to $2,000,000.

Among improvements of rivers and harbors for which an estimate is made for the next fiscal year are the following:

New York—East River and Hell Gate, $300,000; Hudson river, $470,000; New York harbor, $635,000; channel in Gowanus bay, $300,000; Black Rock, $1,600,000; Oswego, $185,500.

New Jersey—Passaic river, $310,000; Chesapeake Creek, $158,095; Cold Spring Inlet, $265,000.

New York and New Jersey—Staten Island Sound, $200,000; channel between Staten Island and New Jersey, $220,000.

## POSTOFFICE BOAT FOR URUGUAY.

An interesting little vessel, 90 ft. long by 14 ft. beam, named the Correo del Uruguay, has just completed her trials on the Clyde, and will shortly be shipped to Montevideo She has been built to the order of the Uruguayan government by Messrs. Yarrow Co., Ltd., Glasgow (formerly of Poplar, London), and is intended for loading and unloading mails from the steamers that call at the port of Montevideo. She is built of galvanized steel, and provided with one set of triple-expansion surface condensing engines and a Yarrow water tube boiler. There is a deck house aft containing the saloon and sleeping accommodation for three officials, and also a sorting room for mails. In the forward cabin there is accommodation for four assistants, and below deck there is sleeping space for the crew. There are two holds for carrying the mails, the forward hold being intended for heavy packages, in connection with which a derrick is fitted on the mast; the after hold is intended for the lighter mails. A complete electrical installation is provided for lighting the internal parts of the vessel, and a small searchlight is fitted on the top of the forward cabin. A stout hard wood rubbing piece is worked all around the hull to serve as a fender in going alongside the mail steamers out in the roads. This little vessel is also provided with a 37 m/m Armstrong quick firing gun forward. The official trial was made at the mouth of the Clyde in the presence of the Uruguayan authorities and the representatives of Lloyds, when a mean speed was obtained of 11.4 knots at 120 lb. steam pressure, and 13.3 knots at 220 lb. The Correo del Uruguay will be shipped whole to Montevideo on the deck of a cargo steamer.

Generated on 2024-08-28 16:21 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

THE MARINE REVIEW

DEVOTED TO EVERYTHING AND EVERY INTEREST CONNECTED OR ASSOCIATED WITH MARINE MATTERS ON THE FACE OF THE EARTH.

Published every Thursday by

**The Penton Publishing Co.**
**CLEVELAND.**

BOSTON.....73-74 Journal Bldg.
BUFFALO.....932 Ellicott Sq.
CHICAGO.....1328 Monadnock Blk.
CINCINNATI.....First National Bank Bldg.
NEW YORK.....1005 West Street Bldg.
PITTSBURG.....510 Park Bldg.
SEATTLE.....302 Pioneer Bldg.

*Correspondence on Marine Engineering, Ship Building and Shipping Subjects Solicited.*

Subscription, U. S. and Mexico, $3.00 per annum. Canada, $4.00. Foreign, $4.50. Subscribers can have addresses changed at will.

Change of advertising copy must reach this office on Thursday preceding date of publication.

The Cleveland News Co. will supply the trade with the MARINE REVIEW through the regular channels of the American News Co.

European Agents, The International News Company, Breams Building, Chancery Lane, London, E. C., England.

Entered at the Post Office at Cleveland, Ohio, as Second Class Matter.

November 26, 1908.

## NEW HAMPSHIRE'S GREAT SENATOR.

One of the well-known senators who will come up for re-election at the hands of his legislature this winter is Senator Gallinger, of New Hampshire, and the ship owning and ship building interests of the seaboard cannot but be particularly desirous that Senator Gallinger should receive another unanimous endorsement from his people. New Hampshire is a little state but it is a great state in the weight of its influence in Washington. Senator Gallinger is a leader of the senate, not merely in length of service but in strong, genuine achievement. He is and always has been a hard-working senator, inflexibly attentive to his public duties, and yet because of a frank and gracious temperament he has always had a great following of personal friends in Washington as well as in his own state of New Hampshire. It has often been remarked of Senator Gallinger that he was one of the public men who could do things because, while a good, strong party man, he has ever been mindful of the amenities of life, and has thus preserved the cordial regard of those who differed from him as well as of those who agreed with him.

Cleveland remembers well the agreeable impression made by Senator Gallinger in his appearances here, notably when he conducted the inquiry of the merchant marine commission. Senator Gallinger, as chairman of that national commission, was quick to recognize the importance of the great lakes as a source of information on questions of ship building and ship owning, and he has often acknowledged that a very large part of the best of the immense mass of information which the merchant marine commission gathered came from the great lake ports—from Cleveland and Detroit and Milwaukee and Chicago. Ever since the merchant marine commission began its work, Senator Gallinger has succeeded in holding this question of our merchant shipping before congress and the country, and twice, by the power of his influence and his thorough understanding of the subject, he has brought great shipping bills through the senate by large majorities. The latter of these bills, the ocean mail measure, now awaits the action of the house of representatives.

All of our people of the middle west who are interested in ship building and navigation—and there are thousands of them—and the still larger number who, without direct connection with the shipping business, yet desire to see a great ocean shipping of our own for the spread of our commerce and the defense of our flag, will look forward with eagerness to see Senator Gallinger again triumphantly confirmed by New Hampshire in his seat in Washington. If Senator Gallinger had done nothing else but command the increasing attention which he has won from congress for our merchant shipping, his re-election would be justified a hundred-fold. But this is only one of many achievements of a long, energetic and honorable public life. At one time or another all of the best and greatest interests of the country have been served by Senator Gallinger, and all will be gratified by his re-election for another full six years' term in Washington.

## LIFE SAVERS NATIONAL BENEFIT ASSOCIATION.

The Life Savers National Benefit Association has been organized at Milwaukee with the following officers: R. Wachsmuth, Gloucester, Mass., president; Orton E. Lord, Algiers, La., vice president; Charles E. Meyland, 926 Winnebago street, Milwaukee, Wis., secretary and treasurer. The purpose of the organization is to secure the passage of a life savers' pension bill by congress, but as congress is a deliberative body it proposes meanwhile to solicit contributions from the public, the beneficiaries to be those that have been discharged from the life saving service on account of disability or the infirmities of old age. It is represented that the higher positions in the life saving service are now filled by men from the revenue cutter service, who enjoy the benefits of a retiring list with pay.

There is no doubt whatever but that provision should be made for the rank and file of the life saving service, the men who actually risk their lives in the performance of duty. For them there is no retiring list. In fact so unattractive is the service made to the rank and file that on the lakes especially, new crews have practically to be broken in each year. If employment could be made permanent with a fair pension or disability or old age, competent men would be attracted to the service.

## CONTRACT FOR LAKE VESSELS.

A contract for two 5,000-ton package freight steamers was closed about 10 days ago by Charles M. Heald, president and general manager of the Mutual Terminal Co., Buffalo, N. Y., with President Pessano, of the Great

Generated on 2024-08-28 16:19 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

Lakes Engineering Works, of Detroit. This contract calls for the building of two first class package freight steamers. They will be 370 ft. long over all, 350 ft. keel, 46 ft. beam, 30 ft. deep, and will be equipped with all the latest improved cargo handling gear and machinery. The engines will be of the quadruple type with cylinders 19, 27, 40 and 58 in. diameter by 42-in. stroke. The boilers will be of the Scotch marine type with a working pressure of 210 lb. steam.

The steamers will be duplicates of the steamer Delaware, built by the Great Lakes Engineering Works for the Erie & Western Transportation Co. (Anchor line). Steamers are to be ready for delivery in May, 1909, and will cost $280,000 each.

Contract for a mammoth steel bulk freight steamer was made last week by Wm. P. Snyder, president of the Shenango Furnace Co., Pittsburg, Pa., with President Pessano, of the Great Lakes Engineering Works, Detroit. This steamer will be a duplicate in size and machinery equipment of the flagship Thomas F. Cole of the Pittsburgh Steamship Co.'s fleet. Length over all of the steamer Cole is 605 ft. 5 in., keel 580 ft., beam molded 58 ft., depth 32 ft. Her propelling machinery will consist of one triple-expansion engine with cylinders 24, 38 and 65 in. diameter by 42-in. stroke; two Scotch marine boilers with a working pressure of 180 lb. Delivery of the boat is to be early in the season of 1909. The cost of the steamer will be $485,000. She will be named Shenango.

Mr. Antonio C. Pessano, president and general manager of the Great Lakes Engineering Works, has just been informed by the American Steamship Co., for whom the Great Lakes Engineering Works are building two 8,500-ton steamers, that the first boat to be launched will be named the Theodore H. Wickwire and the second one Clifford F. Moll. Mr. Wickwire is identified with the Wickwire furnaces of Buffalo and is largely interested in these new steamers. C. F. Moll, who is a capitalist of Rochester and New York, is also heavily interested in these ships. They will be managed by Boland & Cornelius, of Buffalo, N. Y.

The American Ship Building Co. closed a contract last week with Cleveland parties for the construction of a bulk freighter to be 400 ft. over all, 380 ft. keel, 52 ft. beam and 27 ft. deep, with triple-expansion engines and Scotch boilers. This is the fourth boat that Mr. Wallace has closed contract for during the past two weeks.

The Empire Ship Building Co., Buffalo, has closed contract with the Empire Engineering Corporation of New York for a new steel drill boat.

## BOAT HANDLING GEAR TEST.

An interesting test of boat handling equipment was carried out on Nov. 20 on board the steamship Havana, of the Ward Line, at her pier on the East River, New York. Six of the Havana's lifeboats, which are equipped with the Ryan-Tanning boat handling device, were used in the test, the boats being handled by the deck department crew exclusively.

In the first test three lifeboats, each with five of a crew, were cleared away, unlashed, had covers removed, were swung out, lowered to the water and unhooked in 1 minute 35 seconds. At a later trial No. 5 boat was cleared away and lowered to the water, with men in it, in 33.5 seconds. The test was witnessed by Capt. Seely and Capt. Wellman, of the Steamboat Inspection Service, Capt. F. C. Smith, Marine Superintendent of the Ward Line; Mr. S. L. Crossing, Assistant Superintendent, and Capt. Raymond, of the Raymond Releasing Hook.

C. E. Coburn, Great Lakes agent for the boat Handling Gear Co., with offices at 17-21 State street, Chicago, Ill., was also present at the test.

## AROUND THE GREAT LAKES.

The steamer James Laughlin ran ashore at Point Iroquois last week on account of the red can buoy being out of place.

The whaleback steamers Trevor and Colgate of the Pittsburg Steamship Co.'s fleet, which were laid up at Erie all season, will go to Toledo for repairs.

The steamer John C. Pringle, which stranded near Euclid Creek two weeks ago, was released by the tug Wm. Kennedy and taken to the west breakwater at Cleveland. She will be repaired at Detroit.

Silas H. Hunter, chief engineer of the steamer William Edenborn, has been appointed assistant inspector of boilers for the steamboat inspection service for the port of Cleveland, succeeding John B. Hayward, transferred to Pittsburg.

The steamer Pascal P. Pratt was destroyed by fire while lying under the lee of Long Point, Lake Erie, last week. The Pratt went into shelter during a gale and lay there with several other boats for two days. On Wednesday morning just as Capt. Moore decided to put out, the chief engineer notified him that the boat was afire aft. It gained headway with such speed that the crew were compelled to abandon her. The Pratt was totally destroyed. The Pratt was owned by the Lake Erie Transportation Co. of Cleveland. She was 247 ft. keel and 40 ft. beam.

The service between Detroit and Buffalo on the Detroit & Buffalo Line has been suspended for the season.

The last trip of the Cleveland & Buffalo Line from Cleveland will be on Monday, Nov. 30, and the last trip from Buffalo on Tuesday, Dec. 1.

Chicago's new fire boat Joseph Medill has been delivered to the city by the builders, the Manitowoc Dry Dock Co., Manitowoc, Wis. It is understood that the boat has exceeded specifications in every particular.

While the steamer John A. McGean was endeavoring to pass out of the canal of the Lackawanna steel plant at Buffalo last week her bow caught the rigging of a hoisting machine used in unloading iron ore, tearing the machinery down. The wreckage fell upon three men, killing two of them and badly injuring the third.

The wooden steamer City of Mt. Clemens was sunk in Lake St. Clair about four miles below the gas buoy in collision with the steamer Neilson of the Pittsburg Steamship Co.'s fleet. The City of Mt. Clemens sank shortly after the collision, the crew of four men taking to the yawl boat. They were picked up almost immediately thereafter by the steamer W. A. Rogers and taken to Detroit. As the sunken steamer is a menace to navigation arrangements were made by the Lake Carriers' Association for lighting the wreck.

The annual meeting of the stockholders of the Great Lakes Engineering Works was held on Nov. 17. The financial condition and strength of the company was shown by the treasurer's report to be most excellent. The company is conserving its financial strength by building up a large surplus. Officers and directors were re-elected as follows: Antonio C. Pessano, president and general manager; George H. Russel, vice-president; H. W. Hoyt, vice-president; John R. Russel, secretary and treasurer; Henry C. Potter Jr.; Henry Ledyard, Ogden P. Letchworth, Robert C. Plumb, Joseph Boyer.

Generated on 2024-08-28 16:19 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

# Naval Architects and Marine Engineers.

The sixteenth annual meeting of the Society of Naval Architects and Marine Engineers which was held on Nov. 19 and 20 in the rooms of the society, Engineering Societies Building, 29 West Thirty-ninth street, New York, was in point of attendance and interest one of the best that the society has ever held. President Francis T. Bowles president. The report of Mr. W. J. Baxter, secretary and treasurer, shows that the society is in excellent financial condition, though losses have been sustained in membership through resignations and deaths during the year. The society has total resources of $27,818.51 with no liabilities. At the suggestion of President Bowles the members arose while the death roll was read. The roll is as follows:

| | |
|---|---|
| John Bryson | Charles W. Rae |
| Thomas Pray | Sinclair Stuart |
| T. F. Rowland | Alexis Crane |
| Coleman Sellers | Walter H. Singer |

The membership as of Nov. 1, 1908, was 766 as against 801 for the corresponding date last year.

The society elected as members of council the following: Cecil H. Peabody, Massachusetts Institute of Technology, Boston, Mass.; James E. Denton, Stevens Institute of Technology, Boston; Ira N. Hollis, Harvard University, Cambridge, Mass.; Harold C. Norton, Bureau of Steam Engineering, Washington, D. C.; Herbert C. Sadler, University of Michigan, Ann Arbor, Mich.; Horace See, 1 Broadway, New York; Associate members of council: H. L. Aldridge, 17 Battery Place, New York; Harvey D. Goulder, Rockefeller Bldg., Cleveland. Mr. George E. Weed was elected member of council to fill the vacancy caused by the promotion of W. M. McFarland to member of council. Mr. J. R. Andrews was elected member of the executive committee to succeed Mr. Harrington Putnam. Mr. Eugene Tyler Chamberlain, commissioner of navigation, was elected an honorary associate and Frank L. Fernald, Stevenson Taylor and Walter M. McFarland were elected vice presidents. The members and associates elected are as follows:

MEMBERS.

Harry Brown, assistant manager and naval architect, Fore River Ship Building Co., Quincy, Mass.

Eugene G. Burkheiser, chief draftsman, floating equipment, Pennsylvania R. R. Co., Jersey City, N. J.

W. Starling Burgess, president, W. Starling Burgess Co., Ltd., Marblehead, Mass.

H. Dix, naval constructor, N. W. 23, Siegmundshof 22, Berlin, Germany.

Theodore E. Ferris, naval architect, 90 Wall street, N. Y.

Henry M. Gleason, assistant naval constructor, U. S. N., navy yard, Philadelphia, Pa.

Ernest N. Janson, mechanical engineer, bureau of steam engineering, navy department, Washington, D. C.

James W. Lee, general manager, Skinner Ship Building & Dry Dock Co., Baltimore, Md.

James Macfarlane, superintendent floating equipment and dredging, Isthmian Canal Commission, La Boca, C. Z.

John F. Mettan, chief draftsman, engineering dept. Wm. Cramp & Sons S. & E. B. Co., Philadelphia.

Ernest H. Peabody, marine department, Babcock & Wilcox Co., 85 Liberty street, New York.

George S. Radford, assistant naval constructor, U. S. N., navy yard, Norfolk, Va.

George C. Shepard, chief engineer, Maryland Steel Co., Sparrow's Point, Md.

Arthur D. Stevens, president, Merrill-Stevens Co., Jacksonville, Fla.

Bruno Tornroth, chief draftsman, Cox & Stevens, 15 William street, New York.

Frank Walker, naval architect, 233 Globe Block, Seattle, Wash.

John Q. Walton, constructor, U. S. revenue cutter service, 4425 Kansas avenue, Washington, D. C.

George H. Williams, master machinist, steam engineering department, navy yard, League Island, Pa.

ASSOCIATES.

Lew M. Atkins, ensign, U. S. navy, navy yard, Boston, Mass.

Alvah B. Curt, assistant naval constructor, U. S. N., navy yard, Boston, Mass.

Carlos de Zafra, department of costs, Gas Engine & Power Co., and C. L. Seabury & Co., Morris Heights, N. Y.

Waldo P. Druley, assistant naval constructor, U. S. N., navy yard, New York.

Edwin O. Fitch, Jr., assistant naval constructor, U. S. N., navy yard, Boston, Mass.

Richard D. Gatewood, assistant naval constructor, U. S. N., navy yard, Mare Island.

Harry A. Gillis, consulting engineer, Home life building, Washington, D. C.

Chas. A. Harrington, assistant naval construction, Navy Yard, Boston.

Herbert S. Howard, assistant naval constructor, Navy Yard, Boston.

Edwin G. Kintner, assistant naval constructor, Navy Yard, Norfolk, Va.

Harry G. Knox, assistant naval constructor, Navy Yard, Boston, Mass.

Emory S. Land, assistant naval constructor, Navy Yard, New York.

Henry H. Lynch, president, Hodge Boiler Works, East Boston, Mass.

William D. Macy, secretary-treasurer, N. Y. & Cuba Mail S. S. Co., 94 St. James Place, Brooklyn.

Winthrop L. Marvin, journalist, 131 State street, Boston, Mass.

Heinrich Retzmann, commander I. G. N. Naval Attache, German Embassy, Washington, D. C.

Roy W. Ryden, assistant naval constructor, Navy Yard, Portsmouth, N. H.

Robert M. Thompson, 43 Exchange Place, New York.

George C. Westervelt, assistant naval constructor, U. S. N., Navy Yard, New York.

Lee Scott Border, assistant naval constructor, U. S. N., Navy Yard, Boston, Mass.

Alexander H. Van Keuren, assistant naval constructor, U. S. N., Philadelphia, Pa.

Edward C. Hammer, Jr., assistant naval constructor, U. S. N., Navy Yard, Mare Island, Cal.

Paul H. Fretz, assistant naval constructor, U. S. N., Navy Yard, Boston, Mass.

Isaac Irving Yates, assistant naval constructor, U. S. N., Navy Yard, Boston, Mass.

JUNIORS.

Howard H. Brown, editor, boiler maker, 17 Battery Place, New York.

George K. Erdman, draftsman, Maryland Steel Co., Sparrows Point, Md.

Harry A. Musham, assistant ship draftsman, Navy Yard, Washington, D. C.

A. Cyril Rimmer, engine draftsman, Geo. Lawley & Son Corp., South Boston, Mass.

ASSOCIATE TO MEMBER.

Clinton H. Crane, naval architect, 52 Pine street, New York.

William G. DuBose, naval constructor, U. S. N., Navy Yard, Norfolk, Va.

Generated on 2024-08-28 16:18 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

William McEntee, assistant naval constructor, U. S. N., bureau of construction and repair, navy department, Washington, D. C.

Walter C. Millard, naval architect, 17 State street, New York City.

Charles C. West, vice president and manager, Manitowoc Dry Dock Co., Manitowoc, Wis.

JUNIOR TO MEMBER.

William Binley, Jr., leading draftsman, C. & R. Dept., Navy Yard, New York.

Lewis H. Kenney, draftsman-in-charge, steam engineering department Navy Yard, Philadelphia, Pa.

John G. Kreer, chief engineer, construction department, J. T. Ryerson & Son, Chicago, Ill.

Richard B. Sheridan, chief sales engineer, Brown Hoisting Machinery Co., Cleveland, O.

JUNIOR TO ASSOCIATE.

D. Millard Callis, estimator, Maryland Steel Co., marine department, Sparrow's Point, Md.

PRESIDENT BOWLES' ADDRESS.

The address of President Bowles was, as usual, quite admirable in its array of facts. He said:

"Ship building and navigation in the United States have felt severely in the past year the depression that has weighed upon all other business interests. Because of orders placed before this depression began, the ship building output of the fiscal year ending June 30, 1908, was, however, the greatest in our history, attaining a total of 1,457 vessels of 614,216 gross tons, according to the records kindly furnished in advance of his annual report by Mr. Eugene T. Chamberlain, the commissioner of navigation. This was a far greater output than the 1,157 vessels of 471,332 tons built and documented in the previous year. Of the 614,216 gross tons of shipping built in the fiscal year 1908, no less than 450,017 tons was composed of steel. To this great product, however, both in total construction and in steel construction, the Great Lakes of this country, doubly protected by geography and law, were the chief contributors. The steel steamers of over 1,000 gross tons built on the seaboard of the United States last year numbered 25, of 101,658 tons, while 58 steel steamers of 322,806 tons were launched by lake ship building companies.

"But shipowners, embarrassed by low freights and reduced volume of business following the panic of a year ago, have placed very few new orders with the shipyards of either lakes or ocean. On July 1, 1908, the commissioner of navigation was unable to find any new contracts for large steel steamships in the whole range of the lakes, though since then, with the gradual revival of trade and industry, several heavy carriers have been ordered. For the first quarter of the current fiscal year—the months of July, August and September—the tonnage built and documented in the United States amounted to only 20,887 gross tons, as compared with 133,092 gross tons for the corresponding months of 1907. On July 1, 1908, there were building on the seaboard only 13 steel merchant vessels, of 14,775 tons, as compared with 84, of 149 524 tons, in hand July 1, 1907. The government vessels under construction July 1, 1908, were 82, of 136,091 tons displacement, as compared with 45, of 151,993 tons, on July 1, 1907. The present fiscal year, therefore, opens gloomily in ship building. This situation is not peculiar to America. The dullness is worldwide. Lloyd's returns for the quarter ending September 30, 1908, show that, excluding warships, there were under construction on June 30 in the United Kingdom 319 vessels of 733,378 gross tons, as compared with 450 vessels of 1,080,087 gross tons on June 30, 1907.

"In this country as abroad, however, waterborne freights are now steadily improving, and this revival ought logically to be followed by an increase in merchant ship building, though it is not to be expected that the output of American shipyards can now be made to equal the record-breaking figure of the year before. The outlook for a good year's activity would be much brighter than it is if the shadow of so-called high finance had not fallen upon some of the largest and strongest of our coastwise steamship lines. The combination under one control of the steamshp services of our Atlantic seaboard has left a heritage of embarrassment for which this industry itself is in no way responsible. It is safe to say that this experiment, which resulted in such quick disaster, will not be soon be repeated, and that our Atlantic steamship services, of fine, honorable repute, will be left hereafter to the tried and capable hands that have long and successfully administered them. The experiment will unmistakably lessen, for the time being at least, the power of some of the best and strongest of our coastwise companies to increase their tonnage and enhance the efficiency of their fleets. This is a misfortune to ship owners and ship builders alike.

"One recent event which all Americans must deplore is the transfer of the two largest American-built steamships in the trans-Atlantic trade, the Finland and Kroonland of the Red Star Line, from American to Belgian registry. This leaves only five steamships under the American flag out of all the great fleet plying between our coasts and Europe—and four of these five steamships are subsidized for carrying the mails between New York and Southampton. These Red Star and American line vessels represent the efforts made under the stimulus of the professional energy and patriotic zeal of Charles H. Cramp to win for American ship builders the opportunity to take part in the foreign trade and in the great achievements of our English and German fellow-craftsmen in the development of the trans-Atlantic service.

"We know that as naval architects and engineers we cannot reach our full stature as long as we are debarred from the foreign trade, that great field of professional and business activity from which we are shut out by conditions over which we have no control.

"In 1907, the world built 323 seagoing merchant steamers each of more than 3,000 tons gross, aggregating 1,621,347 tons. This was a busy year in American shipyards, and of these 323 steamers we turned out eight vessels of 44,072 tons.

"This change of register of the Finland and Kroonland, accompanied as it is by the frank explanation that its purpose is to secure the advantage of lower wages and cheaper maintenance under foreign colors, is another demonstration that the American merchant marine cannot maintain itself in overseas trade without some vigorous national protection and encouragement. If the few American built steamships which we now possess are being transferred to foreign flags, it is manifest that the free ship expedient, so often and confidently urged for the upbuilding of our merchant fleet, is, as many of us have steadily maintained, a delusion unworthy of further serious attention from practical men. This episode is but the logical sequel to the reply of the International Mercantile Marine Co. to the Congressional Merchant Marine Commission, a few years ago, that American ship owners would not take foreign vessels and place them under the American flag if Congress were to give them the opportunity.

"Sensational criticism of American battleships recently came before an astonished public as the result of some conflict of opinion among naval officers

Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

as to methods of naval administration. Such criticism has largely recoiled upon its authors, as it was not sustained by the great preponderance of naval opinion and also because of the great success of the battleship cruise.

"This cruise has been seriously marred by the fact that the armored fleet has been forced to depend upon a nondescript crowd of foreign 'tramps' to transport and deliver coal. These foreign vessels were cheaply chartered, but their use has proved of doubtful value to the government, even on a peace cruise, where compliance with a prearranged schedule was a matter merely of convenience. These foreign ships, whose owners have sought only the profits to be made out of our necessities, have often failed to meet the fleet at the ports whither they were ordered, and have shown clearly how impossible it would be to place any reliance upon them in time of war.

"There is one sure way to reduce the first cost of American built ships, and that is to make it possible to build many of them, to keep our yards in constant operation, to develop standard types and to achieve the economies possible only when the shipyards are driven to their full capacity all or practically all the time. This is a result toward which American shipbuilding deserves to have the frank and loyal cooperation of the American government.

"One great encouraging event of the past year is the passage through the United States Senate on March 20, 1908, without a dissenting vote, of the Ocean Mail bill authorizing swift and direct steamship communication, under the American flag, with the principal countries of South America and the chief ports beyond the Pacific Ocean. This bill failed of acceptance in the House as a part of the Post Office Appropriation bill by the narrow margin of 145 to 153—or, in other words, a gain of five votes would have given it a majority. This issue developed a very much heartier and stronger support from the representatives of the Middle Western section of the country than had ever been given to any proposal for national aid for the merchant marine. It is reasonable to believe that at the coming session the Ocean Mail bill can be brought up in the House and enacted as an independent measure. Another bill of large promise to the ship building industry, which has passed the Senate and been favorably reported to the House, is a joint resolution requiring that none but American vessels shall be used for the carrying of supplies and materials from this country to the Panama Canal. This again is a proposal which, if properly supported, ought at the coming session to win the approval of the House of Representatives.

"It is of large significance that the president-elect, Hon. William H. Taft, has long been an earnest and outspoken champion of the cause of American ship building and navigation. He has advocated national protection and encouragement to these interests not only in many public addresses throughout the United States, but in his formal acceptance of the presidential nomination. Judge Taft has traveled widely. He has seen the world, and he has felt the humiliation that comes to all Americans who look in vain on the ocean highways and in the great ports around the globe for the ensign of their country. He realizes, perhaps beyond any other president whom the American people ever have elected, our imperative need of a merchant shipping to serve our trade in peace and to sustain our battle-line in war. The incoming of such a president succeeding President Roosevelt whose consistent advocacy of our cause we gratefully remember, is a happy augury that the years next to come will bring to the industry we represent a fair share of that prosperity toward which the whole nation now looks so confidently forward. The strengthening of the new navy and the creation of the new mercantile marine are achievements which we heartily believe will signalize the new administration."

The society then proceeded to a discussion of the program of papers, which will be discussed further along in this issue.

The sessions closed with the annual dinner at Delmonico's on Friday evening which was held in the main banquet hall. Sitting at President Bowles' right was Mr. J. G. Butler, president of the Merchant Marine League of the United States, and at his left Congressman John W. Weeks of Massachusetts. President Bowles in his introductory remarks, proposing the usual toast to the president of the United States, said that on this occasion the toast could be doubly pledged with enthusiasm, both for the president and president-elect.

"The year," said he, "has been somewhat poor, but affairs are beginning to brighten and I feel no reason to be discouraged at the present outlook. We are all greatly interested in the upbuilding of the merchant marine and in proposing advancement for the merchant marine I take great pleasure in presenting the president of the Merchant Marine League, because I am convinced that it is through the offices of this league that the question of the merchant marine will eventually triumph."

Mr. Butler said that he had prepared a speech but before proceeding to read it he spoke extemporaneously, saying that when the Merchant Marine League accomplishes its end the ship yards will have to work overtime to supply the demand for ships. He related that he had but recently taken an extensive trip abroad and never saw the American flag but once, and that was on the stern of a Standard Oil barge, from which he concluded that there was some good in the Standard Oil Co. after all. He emphasized especially the great work that is being done in the middle west by the Merchant Marine League to convince congress of the necessity for its upbuilding and he took occasion to pay a feeling tribute to the earnest and disinterested efforts of John A. Penton in this cause, saying that his work has been incessant and of almost incredible energy.

"To protect and stimulate the upbuilding of our merchant marine," said Mr. Butler, "is as truly a part of our great American system as to protect and encourage our manufactured products. Just as long as we neglect to give aid to our merchant marine, just so long will we lack the essential factor to our commercial supremacy and our development be one-sided. It is worse than folly to blind ourselves to the tremendous advantage of a well developed merchant marine and by considering too long and closely the glittering but specious arguments put forth by those opposed to giving the assistance absolutely necessary to enable our ship builders to meet foreign competition. The same uncandid and one sided presentment of the situation has, for years, been made by those opposed to the tariff; and yet all those than can see the truth clearly know that protection is the foundation of the greater part of the marvelous development of this country. Protection is not a class policy. It has not enriched manufacturers at the expense of other interests. It has put money into the pockets of the farmers as surely as it has enabled our manufacturers to build up a home market for their goods. Since 1896 the farmers of this country have become affluent; they have paid off the mortgages on their farms and their savings have mightily swelled the deposits of our banks. Nothing has contributed so much to this prosperity of those that till the

Generated on 2024-08-28 16:23 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

soil as the protective tariff. To supplement the tariff, and to give to our growth substance and stability that shall make it enduring we must give to our ship-builders and ship owners, such aid as will remove the ruinous competition of even insignificant foreign nations.

"Like protection, the fostering and upbuilding of our merchant marine will endure to the lasting benefit of all people. The farmer of Iowa equally with the ship builder of Maine will reap the advantage. It means even more to those of the inland states than it does to those of the coast that their products shall be carried to distant foreign ports in American ships under the 'stars and stripes.'

"The present national administration is committed to the American policy of making our merchant marine commensurate with our greatness in other directions. President-elect Taft has taken his stand on the same ground. His varied and worldwide experience has made him very appreciative of the enormous advantage that lies in having American products transported in American bottoms.

"Soon after Judge Taft was nominated for president, I wrote him a letter, of which the following is a copy:

"Youngstown, O., June 21, '08.

My dear Judge Taft:

It seems quite proper that I should join with the multitude and send you congratulations, which I do most heartily. Your election will be as certain as the certainty of your nomination prior to its consummation.

On the same date of your nomination, I was elected president of the Merchant Marine League of the United States to succeed Harvey D. Goulder. I regard this as one of the greatest questions before the American people and bespeak your hearty co-operation and I hope the time will come when the American flag will fly as freely in all parts of the globe as it now does on our inland waters and on the Great Lakes.

Very sincerely,

(Signed) J. G. BUTLER, JR."

"I received a most cordial and affirmative reply to this letter. We may all rest assured that our new president is in hearty sympathy with the extension of the merchant marine and will do all in his power to help it along. It will be remembered that he spoke most enthusiastically about it in his speech at Chicago.

"I come from an inland state. For years the Republicans of Ohio, through their platforms, have declared their belief in the only policy by which the development of our country can be rounded out and completed. Senator Hanna with his clear insight into the needs of the country, fought for it. He lived to see his efforts result in the passage of a merchant marine bill by the Senate. Every Republican Congressman and every Republican senator that goes to Washington from Ohio must stand for the fostering of our merchant marine, if he would truly represent his constituents. Ohio asks of them that they do this much to advance her best interests and unless they do so, they fail to live up to the responsibility placed upon them by their fellow citizens.

"I believe what is needed is a campaign of education and in time the American people will be as enthusiastic about extending our merchant marine as is our friend Mr. Penton, and I might add—that if there is anyone in the United States more enthusiastic than Mr. Penton, or anyone who knows more about it, or anyone who has done more for the cause, I would like to be introduced to him.

"This question of the Merchant Marine like the ancient Gaul, of which Caeser wrote, is naturally divisible into three parts—that pertaining to our national defences; the navy and a naval reserve of ships and seamen; that pertaining to the seacoast industries of ship building and navigation and finally last but not least, that pertaining to the expansion of American commerce. In what I have to say, as a Central Western business man, I shall address myself chiefly to this third consideration—not forgetting however, either of the others and particularly not forgetting the first. To my mind it is a disgrace to all of us, to us Americans of the inland states, quite as much as to the Americans of the Atlantic and Pacific seaboards, that our huge battleship fleet, the pride of the nation, is being convoyed and nursed around the world by a crowd of slow and shabby commercial hoboes, well named 'tramps,' foreign colliers, flying half a dozen foreign flags, cheaply built, with crazy hulls and rattletrap engines, and manned by the refuse of humanity. It is no wonder that these 'tramps' have failed again and again to arrive on time at their destination and to deliver their coal where it was expected and where it was required. The only strange thing about it is that these 'tramps' turned up anywhere at all. Yet I am not condemning the United States government for employing them. It had to do this, or our battleship fleet could not have started from Hampton Roads, for such is now the skeleton weakness of our merchant marine that practically no long-voyage American cargo steamships are available.

"Splendidly managed as the cruise has been, strong and formidable as is the fleet, and brave and efficient as are the 13 thousand officers and men who man it, this cruise, because of our absolute dependence upon foreign colliers, has simply advertised our maritime weakness to the world. We have been able to send these ships abroad in time of peace, but to the shame of our people and the humiliation of our government, the fact stands out, that we could not have done this at all in time of war, when international law would forbid the use of foreign craft as colliers and as supply ships—and without coal these huge battleships of ours, could neither move nor fire a gun. If war had come, or does come now, before our battle-line returns to Hampton Roads, this magnificent armada, which has cost more than a hundred million dollars of American money, would, as has well been said, be, 'as idle as a painted ship upon a painted ocean.'

"Now all this is not the fault of President Roosevelt or of the navy department or of the officers of our navy. Time and time again, they have pointed out the egregious folly and the peril of neglecting our mercantile marine, the indispensable reserve of our fighting marine. Time and time again, the president and the navy department have urged and implored Congress to take some vigorous steps to remedy this desperate situation. But the national lawmakers, though eager and willing to pour eighty million dollars a year into deepening our waterways, chiefly for the use of foreign ships, have refused, up to this time, to give a single dollar for the encouragement of our merchant shipping, so that we might have colliers and supply craft of our own and seamen of our own in case of war. The very best welcome that congress can give the battleship fleet, on its homecoming next February, is the enactment of the legislation now pending, to create swift and regular lines of American steamships to South America and across the Pacific ocean, and to give American ships the preference in the carrying of supplies and materials to Panama.

"Now, after this division, I will come to our own home section of the country, the farms and factories of the middle west. Our people of Ohio and the other inland states have the same interest as the people of New England, New York, Pennsylvania, California, Oregon and Washington, in main-

Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

taining the honor of our flag and the security of the nation, through an adequate naval reserve of auxiliary ships and sailors. But beside that, they have a direct personal interest in the development of a strong American merchant marine, because it is the central west that produces the great bulk of the merchandise that makes up our foreign commerce in the form of exports to distant lands. Let us see what these exports are. In the fiscal year ending June 30, 1908, we sold to foreign nations $1,834,000,000 worth of merchandise. No less than 10 per cent of this was made up of food stuffs and food animals; 18 per cent more of food stuffs partly or wholly manufactured; 30 per cent of raw materials for use in manufacture and about 40 per cent of manufactured articles partly or wholly ready for consumption.

"Practically all of the food stuffs and food animals and about all of the raw materials except cotton, and I believe a very large majority of our manufactured exports were the product of the central western states between the Alleghenies and the Rocky Mountains. It is a fair estimate to say that of our total exports of $1,834,000,000 last year —a large commerce and yet by no means so large a commerce as it ought to be—75 per cent was the output of capital and labor employed in states which build no ships and have no foothold on either coast line. It is a mistake to say that we inlanders have no interest in the development of a merchant shipping. Our interest, I maintain, is greater, far greater than is that of those of you who live within sight of either the Atlantic or Pacific ocean.

"This is just as true of our central western farmers as it is of our central western manufacturers—indeed it is truer of our farmer, if anything, because by far the greatest share of our exports to foreign lands is still composed of the products of agriculture. We are doing now, as a nation, what no thrifty merchant would dream of doing; we are depending in our international commerce on our rivals in trade—our rivals in trade and possible enemies in war—to deliver our goods to overseas customers. Would a great department store in Chicago, or Cincinnati, or St. Louis, do this? Would it depend upon its rival across the street for its delivery service? Well, if it did, the end would be quick and certain. The merchant who made the experiment would be in the bankruptcy court in a dozen months. We Americans are called an acute people. I think that is true to a great extent in our individual business transactions. But in our international transactions, we are the easiest, most innocent, most gullible people in the world. We actually permit nine-tenths of our international delivery service to be performed by foreigners—by Englishmen, Germans, Frenchmen, Italians, Norwegians, Dutch, Portuguese, Japanese—and we have only 10 per cent or less of our deliveries to foreign lands performed by our own ships and sailors.

"What is the commercial result of this? Why since human nature is as it is the result is just what might have been anticipated. Our foreign competitors use their best delivery wagons for their own trade, and palm off their inferior craft upon us Americans. Read, for example, this statement from the *Consular and Trade Reports* of March, 1908:

"'The irregular freight arrival of American goods at foreign ports is detrimental to export business. Consul Hill, of Amsterdam, says that flour takes a few weeks in coming from Minneapolis to Amsterdam, at times, and at other times by the same regular line of steamers, it takes as many months. The consul adds: "There is something wrong here."'

"There is, indeed. It is the lack of our own marine delivery wagons, of our own steamships, built and run in American interests, to deliver American goods. Naturally this affects us most in those neutral markets like South America, Asia and Australasia where we are closely competing with the European maritime nations for the mastery. European ships belong almost invariably to corporations. These corporations are owned and controlled in the main by European manufacturers and merchants. These foreign manufacturers and merchants are desirous of selling all the goods they can to the people of South America, for example, and are directly interested to keep us Americans out of the market so far as is possible.

"Now, the way they do this is to maintain swift and regular lines of steamships, usually subsidized by their own government, sailing once a week or oftener from Europe, direct to South America. On these European direct lines, these foreign corporations employ their newest, largest and fastest, and also most efficient ships, capable of carrying passengers, mails and freight at the lowest rates, and of still making a reasonable profit. Then these European ship corporations, owned and controlled, as I have said, by European manufacturers and merchants, take their oldest, smallest and slowest ships, discarded and obsolete from the European service, and put them on the routes, say, from New York to South America, sailing perhaps once a month—or not sailing at all if it happens that these ships are demanded elsewhere by some exigency of European commerce.

"These European ship corporations give us just enough of a service to South America to make it difficult to put American steamships on the route. Time and time again American merchants have tried to run ships from South America and they have found the European steamship companies backed by the treasuries of their governments, combining against them and forcing rates down temporarily to a ruinous figure. After these powerful combinations have run American ships off the passage, freight rates have been again advanced and the losses made good.

"Let us take a specific case in point. The American consul at Santos, in southern Brazil, in the *Consular and Trade Reports* for September, 1908, states that though Brazilians prefer American-built motor boats to all others, yet there is difficulty in gaining a market for them there 'because the freight rates from New York were about double the rates from Europe.' One Brazilian merchant, for example, paid 1,200 milreis or $360 freight, American money, from New York to Santos on a 26-ft. launch.

"This illustrates the way in which our lack of American ships enables foreign manufacturers to throttle the American export trade to South America. These European steamship corporations have our manufacturers and merchants entirely at their mercy. Take this instance of the motor boats. We make in this country more motor boats and better motor boats than any other nation in the world. We can sell them probably as cheap. But we are deliberately kept out of the South American market because we have no means of delivering our own goods to our own customers. The European steamship company that ships motor boats direct from Europe to Brazil controls also the shipment of motor boats from New York to Brazil. If the European manufacturers and merchants who control this steamship corporation see the American motor boats are coming in large numbers into the Brazilian market, all they have to do is to tell the steamship company to mark up the freight rates to double the rates on European motor boats shipped out from European ports. The steamship company does this and the result inevitably is that Brazilian merchants, instead of buying motor boats in the

Generated on 2024-08-28 16:19 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

United States, place their orders in Great Britain or France or Germany. The European steamship corporation is not the loser. It gets the carrying of the motor boats at any rate, and being a European corporation, it naturally prefers to see the Brazilian demand for motor boats supplied from Europe.

"Now this example of motor boats is simply one case in point. What is true here is true of a hundred other things—of tools, machinery, cotton fabrics, agricultural implements, flour—of everything which we produce in the United States and try to sell in South America in competition with Europe. A few men in Liverpool or London or Hamburg or Bremen or Havre or Marseilles or Genoa, all foreigners, striving to build up the commerce of their own country and to keep down the commerce of the United States in South America. A few foreign steamship managers have the absolute power to smother the export trade of the United States to great countries like Brazil or Chile or Argentina. If they find American merchandise threatening the supremacy of their own merchandise in these distant markets, all they have to do is to agree upon any increase in the freight rates on American products shipped in the steamships they control, or a reduction in the sailings of those steamships.

"The reports of our representatives in South America are full of complaints that the European steamship companies monopolize the delivery of our goods to South America, discriminate against American producers in every possible way. Says the American minister to Ecuador:

"'I was informed recently by a prominent merchant here that he would like to deal with New York, but that the freight rates from that city on some of his purchases were five-fold greater than like freight from Hamburg, which was a practical prohibition of American trade.'

"Says Special Agent Hutchinson, of the department of commerce and labor:

"'Freighting facilities from New York to Chile and the River Platte are inferior to those from Europe, both as regards frequency, regularity and time required for delivery and as to rates.'

"Says the American consul at Asuncion, Paraguay:

"'Dealers here usually complain that freights and expenses are much higher on goods coming from the United States to Europe.'

"Says the American consul at Valparaiso, Chile:

"'Valparaiso is only about 5,000 miles from New York, but it requires from 70 to 80 days to get a reply to a business letter and to get an order filled and delivered, generally takes from five to six months, when it should be accomplished in one-half the time, as is the case in Europe.'

"This is what it means to leave our delivery service in the hands of our competitors. In view of these facts it is not at all surprising to read the records of our bureau of statistics that our exports of American merchandise to Argentina in 1907 decreased $3,159,000 from the year before, while the exports of Great Britain to Argentina increased $3,100,000 and the exports of Germany by $7,300,000. Nor is it surprising that though Brazil grants us a preferential tariff, our exports to that country are less than one-half of Great Britain's exports and considerably less than the exports of Germany. These European nations—and what is true of Great Britain is true also of France, Italy, Germany, Portugal, Spain, Austria, Sweden and Norway—all give national aid to swift and regular steamship services of their own, or, in other words, all our competitors in trade take care to provide their own delivery service for their own manufacturers and merchants.

"The lack of an American merchant marine hurts the ship builders, owners and seamen of the coast. But it hurts even more the merchants and farmers of the central west—the producers of the great interior. Of what avail are the wonderful industrial energy and economy of our people if, when we have produced a case of machinery or a lot of flour, at a price that enables it to be sold in Brazil or Argentina, we find that we cannot sell it there, because a European steamship corporation compels us to pay twice as high a freight rate as on similar goods exported to South America from Europe? The great European department store controls its own delivery service also and the result is just what might be anticipated. It delivers its own goods promptly and efficiently at reasonable rates and it throws every possible obstacle of high rates and slow, irregular and inefficient service against the delivery of American merchandise.

"For many years a hard and fast European steamship trust or combination has absolutely controlled the delivery of American manufactured goods and agricultural products to the principal countries of South America. It has controlled also the delivery of the United States mails and has actually compelled our postoffice department to send those mails by way of Europe, at the cost of double transit rates paid out of our treasury to foreign governments. When a few months ago the ocean mail bill, recommended by President Roosevelt and Judge Taft, was temporarily defeated in the house of representatives by the opposition of about 30 Republican representatives from the central west, this European steamship trust held a meeting in London, presided over by a German steamship magnate, and advanced the freight rates on American provisions and other products, from 50 to 100 per cent.

"There is nothing that these European steamship monopolies dread so much as the enactment of the ocean mail law, that will come up next winter before the house of representatives, providing for the establishing of swift and regular American steamship lines to the principal countries of South America and across the Pacific ocean. These foreign steamship monopolists depend upon representatives of the central west in congress to defeat this bill and to thwart the efforts of President Roosevelt and Judge Taft to break up the foreign trust by creating a vigorous independent ocean delivery service of our own. I am very sure that to a greater degree than ever before the European steamship combination is going to be disappointed. A year ago 22 per cent of our central western representatives in congress failed to stand by the administration on this issue. Last May only 16 per cent were lacking. The day is near when our central western support of the American merchant marine will be unanimous and vigorous as is now our western support of the American navy.

"Direct and regular steamship lines to South American and to the great countries beyond the Pacific ocean—a quick and efficient delivery service for our American mails, merchandise and passengers—will inevitably mean to our commerce with those different lands what a like service has meant to our export trade to the nearer countries of the West Indies and Mexico.

"It happens that the United States government now pays a moderate but sufficient mail subvention to several American steamship lines to the ports of the Caribbean and the gulf. The manufacturers, merchants and farmers of the middle west can send their goods in American steamships to Cuba or to Mexico without paying tribute to the ship owners of Europe. If there is a case of central western machinery or 100 bbl. of flour on the docks at New York, we do not have to cable to Hamburg or London or Liverpool to ask what it will cost to get those

Generated on 2024-08-28 16:19 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

goods transported to Havana or Vera Cruz. We have a delivery service of our own in swift and powerful steamships, built to serve as auxiliary cruisers in time of war, officered and largely manned by American citizens. We have railroads also to Mexico, but a large proportion of our exports to Mexico go by sea.

Now, what is the result? It is written plainly in the statistics of our Cuban and Mexican commerce. Instead of lagging far behind Europe as we do in the markets of those Latin countries whither Europe controls the delivery service, we stand far ahead of Europe in the markets of both Cuba and Mexico. We stood far ahead of Europe in the markets of Cuba even before the present reciprocity agreement was negotiated. We sold to Cuba in 1907, $48,192,000 worth of merchandise, as compared with $13,639,000 sold to Cuba by Great Britain, $8,286,000 by Spain, $6,433,000 by Germany, and $5,781,000 by France. This is what an American delivery service has done for the producers of our central west in the greatest and most prosperous market of the Caribbean archipelago.

"Mexico out of total exports of $87,000,000, purchases no less than $50,000,000, or 57 per cent, from the United States. Here again is proof of the advantage to the middle west of controlling our own delivery wagons.

"Let congress pass the ocean mail bill, and in a few years we will dominate the markets of Brazil and Argentina and Chile and Peru, just as we now dominate the markets of Cuba and Mexico. We make chiefly in the central west the goods they need—the tools, the agricultural implements, the machinery, the flour, the provisions. An American merchant marine, strong, progressive, prosperous, aggressive, means much to the ocean states where the ships are built and launched and owned. But it means still more to the people of the states who must produce the cargoes. A ship is built in the ship yard. She is launched, and when she sails away the ship yard work is done. But the use of that ship in the carrying of commerce goes on year after year. She must have a freight for every voyage and three-fourths of the freight, as I have said, must come from the great industrial states between the Alleghenies on the one hand and the Rocky Mountains on the other. The factories and farms of those inland states are producing the goods. The coast states, with reasonable national aid, can create the delivery service. That delivery service will return a profit to the ship builders and their workmen, to the owners and their seamen of the coast. But after all the great returns will come not so much to those who deliver as to those who produce and sell the merchandise. A representative to congress from Ohio or Illinois or Iowa or Nebraska, who votes against the establishment of American ocean mail lines to South America and across the Pacific ocean is hurting New England by that vote and New York, Pennsylvania and the Pacific coast, but he is hurting his own people more."

Hon. John W. Weeks, congressman from Massachusetts, had been assigned the toast of the navy. He said that personally he would prefer to talk about the merchant marine, the league, and congress, but that anyone should regard it an honor to speak of the navy. He was frank to say, however, that while the personnel of the navy is among the best in the world, the system under which they operate is extremely passe. He believed that they were handicapped by the system under which they operate, holding the present bureau method of administration to be antiquated. He thought that the fleet should be built in a homogeneous way, that is to say, each battleship should have a corresponding support in cruisers, torpedo boats, and colliers. He declared it a shame that the Pacific fleet should have had to make its way around the world without auxiliaries and to be compelled to get its coal from foreign ships. He said that the United States has a navy yard in Samoa, the supplies to which are invariably carried in foreign vessels. He also referred to the difficulty of getting seamen and that the United States should have a suitable naval reserve. There is no way to get it except through the merchant marine. Getting down to practical things, he said that the individual congressman is very responsive to the wishes of his constituents, that in actual practice a majority of them hold their positions through slender margins and are desirous of maintaining that margin intact. Every congressman reads his home paper and is inclined to favor what his district favors. He therefore urged that boards of trade and commercial organizations give expression of their views on the merchant marine and communicate with their representatives at congress. He thought it extremely fortunate that the Merchant Marine League was an organization of the interior, because on the coast the necessity for ships is better appreciated than it is in the interior states. He thought the Merchant Marine League had done a fine service and he believed that through its office an adequate merchant marine might be secured. "At any rate," he said, "the indications are auspicious for the enactment of such legislation."

Lieutenant Commander L. H. Chandler, who was the flag secretary of the Pacific fleet, declared that an adequate navy could not exist without a merchant marine. The merchant marine is and should be the chief consideration, because the navy has no excuse for existence if there is no merchant marine.

Col. R. N. Thompson said that congress should recognize the weakness of the merchant marine and would act wisely to correct it. If the weakness is due to lack of protection, protection should be afforded. If a subsidy is necessary, then let a subsidy be bestowed.

Naval Constructor W. J. Baxter said that he believed in building a certain number of ships in navy yards and that while he admitted that they could not build them as cheaply as private yards would sell them to the government, still he held it to be unquestioned that the navy yards could build good ships.

Those present were:

J. R. Andrews, H. S. Grove, Charles E. Hyde, Thomas I. Miller, Wm. Hoogaard, George W. H. Buce, J. H. Linnard, W. A. Post, J. W. Kellogg, Philip B. Brill, F. K. Lord, Robert F. Haight, H. C. Higgins, A. W. Stahl, Walter S. Leland, George N. Gardiner, E. P. Bates, Frederic D. Herbert, W. D. Forbes, Ernest W. Janson, E. S. Land, Lieut. Radlerdelquin, A. M. Merrill, J. G. Butler Jr., H. L. Aldrich, A. Appleton Packard, W. L. Sullivan, P. C. Allen, V. C. Metzger, J. F. Davis, Carleton W. Hubbard, Howard E. Fisher, Philip E. Young, H. W. Perry, W. P. Stephens, Thomas G. Miller, L. H. Chandler, Maxwell W. Day, A. W. Stahl, F. T. Bowles, Walter S. Leland, Charles E. Hyde, W. Carlisle Wallace, Andrew Fletcher, J. W. Kellogg, H. A. Magoun, Warren T. Berry, J. Howland Gardner, E. W. Buckslew, G. E. Bruer, Robert Curr, J. W. Powell, Geo. E. Weed, A. White, Eugene R. Pommer, John D. Schmidt, Walter M. Ames, Frank A. Track, A. Ross Mackay, W. R. Emmet, George E. Hoffman, Oliver Roland Ingersoll, H. S. Hayward, Allen D. Woods, D. B. Goodsell, W. J. Baxter, Baron von Preuschen, J. D. Williams Jr., W. W. Meek, Eugene

Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

R. Pommer, F. L. Fernald, R. R. Row, John Platt, George F. Crouch, G. Hillman, F. L. DuBosque, Kenji Ide, George A. Orrok, Albert Moritz, Maxwell W. Day, A. P. Niblack, L. H. Chandler, Alex J. Machean, A. Loring Swasey, George W. Magee, C. J. North, Ernest H. B. Anderson, C. E. Burney, Horace See, Darwin Almy, James G. Winship, Robert C. Monteagle, C. H. Peabody, Com. A. Nebolrine, H. A. LaChicotte, Geo. R. Ferguson, Charles H. Bugisilen, William T. Donnelly, David W. Barnes, Lewis Nixon, L. H. Kenney, E. Platt Stratton, Charles Ackerman, E. A. Magee, J. W. Miller, A. P. Lundin, L. Katzenstein, H. Wilkinson, Clinton H. Crane, Elmer A. Sperry, George H. Waters, George R. Bradfield, Allen D. Woods, J. M. Blankenship, W. A. Gillis, Spencer Miller, D. B. Goodsell, H. H. Brown, Charles E. Ward, George H. Williams, Joseph Hugson, Jas. G. Rising, J. E. Schipper, Albert W. Schede, Walter Corwin, J. Ferthey Fox, Harry Barker, K. F. Harcher, David M. Bull, E. A. Stevens, Com. A. Retzmann, H. L. DesAnges, Maxwell M. Gloni, Stevenson Taylor, C. E. Paine, G. C. W. Esterett, R. S. Riley, Jacob Katzenstein, F. C. Le Pirie, Wm. Stevenson, I. W. Babcock, C. E. Burney, Arthur F. Johnson, Arthur C. Settan, M. L. Katzenstein, A. P. Niblack, Albert Moritz, H. L. Des Anges, Maxwell Migloin, Parker H. Kemble, W. F. Carnes, William Houghton, Allen D. Woods, Hiram L. Meeker Jr., Fred C. Whitehouse, Robert W. Bailey, Winthrop L. Marvin, John Mitchell.

### THE WAR EAGLE.

The first paper presented was Mr. Charles H. Cramp's "War Eagle," which was read by Lewis Nixon in the absence of Mr. Cramp, as follows:

Chesapeake Bay in about the first half of the last century was noted as the home of two classes of vessels known over the entire world as the "Baltimore clipper" and the "pungy," as it was called in the ship yards of Philadelphia and Baltimore.

Whether the "pungy" was a development of the "clipper," or that the "clipper" was a development of the "pungy" I have never been able to find out, but I believe that the development of each was coincident, and that they are the outgrowth of the necessities of the period—each in its own class represented the principle of the survival of the fittest.

My great-uncles and my father claimed that these types are antedated their time. The great bulk of the business of the Chesapeake and its surroundings demanding a quick delivery of their products, being principally oysters, early fruits, and farm products, stimulated the construction of fast vessels, large and small. And there is no doubt that the necessities of the slave trade contributed much to the development of this type. All of the slavers were "pungies," but were not called so.

There is no doubt that the different wars that involved all Europe in the last decade of the eighteenth century, consequent upon the French Revolution and the wars of Bonaparte, aided in the development of the "Baltimore clipper."

Commerce of Europe on the Atlantic and Pacific was much embarrassed and almost destroyed by the frequent, warlike convulsions and contentions that prevailed, and the navies of their countries, being occupied nearer home, afforded but little or no protection to what few vessels there were engaged in legitimate trade, and in view of the high price of the goods of commerce, particularly of the Indies, these oceans became filled with smugglers, Malay and other pirates, and privateers, principally French and American, carrying the flags of all nations.

High prices were much augmented by the Berlin and Milan decrees of Bonaparte, and additional stimulus was given to adventurers on the ocean. Americans at that time were particularly adventurers, and the conditions of trade involving excitement and profit, occupied the principal attention of the maritime portion of our country from Baltimore north.

Merchant vessels generally went armed and somewhat under military discipline, were loaded with the necessities of the East which were disposed of by supercargoes, who in turn invested the proceeds in China shawls, teas, spices and other products of the country. Each vessel was a separate commercial venture, the officers and crew being permitted to invest in the cargoes, and there were cases where a party who joined the ship as cook took a greater share than the captain.

Those ships were of necessity fast sailers, officers and owners were pushers, and the natural bent of the ship builder was the same in the direction of fine and beautiful vessels. In Baltimore, where the small ships were all fast, the expression of "Baltimore clipper" became a fixed one for all fast vessels.

There is little or no improvement in the model of the "pungy" from the first I saw hauled out in my father's yard over 60 years ago, up to the last one I saw; I don't know if there are any to be seen today. Steam and the railroads have done much to eliminate the type.

In the early fruit markets of Baltimore, Philadelphia, and New York, two types of vessels were conspicuous; the Chesapeake "pungy" was one of them, and was generally owned in the region of that bay; the other was a different type of vessel used in the region of Staten Island and on the Delaware in the oyster industry; while they were of somewhat similar dimensions to the "pungy," there was a difference in the types.

The "pungy" had a great dead rise, was much sharper and drew more water aft than forward; the stem had quite a rake, and the stern post had much more; and her center of buoyancy was well forward of midships; the other vessels had much less dead rise, less rake to stem, and little or no rake to stern post. The principal difference was that they carried a center board and were in consequence called "center-board schooners."

### METHOD OF BUILDING "PUNGIES" ON CHESAPEAKE.

On the Chesapeake the "pungy" was always built "from the eye" or "by the eye," and the builders never built any other way. There was no model, no "laying down" or "laying off" in the mold loft, nor were molds made there from a "body plan."

Each builder would have a stem and a midship-section mold for all vessels, and as there was little difference in the dimensions of them, these two molds could be adjusted to an increase of a few inches in depth or width to suit contract requirements. No owner would admit that he was a mere copyist and would vary a foot or two in length of keel or a few inches deeper or shallower than his friend's boat.

The length of vessel was always determined by the length of keel, which was generally about 60 ft.

The little differences in dimensions were easily made by the builder by the adjustment of the stem and midship-section molds. The first thing done was to lay the keel, then the stem mold and a straight board representing the stern post and its rake were tacked on to the keel, and when the amidship section was secured, a grand beginning was made in the form of the vessel.

When this was done the owner was called to approve or modify the exhibit. He would always desire a small change

Generated on 2024-08-28 16:19 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

somewhere which the builder consented to have done, but he rarely ever did it.

Then the stem itself and stern post with transom bolted on would be raised, also a midship-section mold of pine plank would be secured. The next step, which was always considered an important one, was to run the floor ribband which would be just below the floor heads. The adjustment of this floor ribband by means of shores put under it was a second important step in modeling the vessel. The builder was guided somewhat by temporary adjusting molds forward and aft that had often been used before for the same purpose. The relationship of fineness of one end to the other was altogether a matter of judgment or taste, or, as some would have it, "guess." But they never departed much from the last boat built. This practice accounted much for the wonderful similarity in all of these vessels built on the Chesapeake and its tributaries, whether they were built earlier or later. In all cases the American instinct was conspicuous.

WOOD DUCK.

Having built a celebrated "centerboard" schooner for a party in the oyster trade in Philadelphia which the owner named the Wood Duck, because he claimed that the wood duck was the handsomest water fowl in existence, another party, a rival in the same business, a John Guyant, the owner of several "centerboard" schooners and one or two "pungies," conceived the idea that if my father could build or do so well in the case of the Wood Duck, he could do as well as the Chesapeake people in the "pungy."

In his contract for one with my father the only stipulation was the length of keel, and that she must be the fastest in both bays. According to custom the owner had a name ready—the War Eagle. He stated that the War Eagle could whip any bird alive.

THE WAR EAGLE.

My father, who never declined taking a reasonable risk in his profession, so sure was he of himself, and this was a great risk, and besides that he always fought for glory and never considered there was much to be gained in the acquisition of a fortune, took the vessel at a low figure to make sure of the opportunity to show the other people in the business what he could do, as most of the other builders were also working for glory. He had subjected me as well as the rest of my brothers to severe drill, never hesitated to put responsible matters in our hands, and I being the eldest and not yet 20, he had sufficient confidence in me to put the whole matter in my hands as to making the model and "laying her down" in the mold loft; of course this was under his supervision and approval. This model is still in existence, but the vessel varied somewhat from it. When in the mold loft I thought it better to imitate the "pungy" type as far as possible and increase the dead rise to suit; having made the model with less, I dropped the base line a foot, keeping the bilge where it had been. This was, of course, with my father's permission. I stated that we might as well be "hung for a sheep as a lamb."

This was the only vessel of her type built north of Baltimore with the exception of a pilot boat or two, and I had my father's word for it that he never heard of one.

SAILING QUALITIES.

The stipulation in the contract that the vessel should be the fastest in the two bays was completely fulfilled.

After some time had elapsed, Mr. Guyant sold the vessel to the Lombard Bros., of Philadelphia, also in the oyster trade, and who were noted for their superior qualities as watermen and in their reputation for making quick trips in their vessels. Desiring to keep up that reputation they lengthened the spars and they soon indicated to the watermen of both bays that they had a master.

I was informed by the late Mr. Hillman, ship builder of Philadelphia, that as a young man he had been brought up on the Chesapeake before he went as an apprentice to my great-uncle and that he was aboard the Protector on one occasion when she came in contact with the War Eagle. On this occasion, the largest fleet of them he ever saw was beating up the Chesapeake in a gale of wind with the Protector as usual in the fore, but with the War Eagle *leading her*.

All of the vessels, including the War Eagle, were under double-reefed mainsail with forestay sail full, and with the foresail and jib furled. Finding that she was shipping seas from the windward very heavily when she rolled, the sea being high, and as Mr. Lombard who was sailing her at that time wanted to make a certain point without tacking, he resolved to take a measure of great boldness, and an additional motive for taking this step was to permanently establish his reputation as a sailor and the owner of the fastest vessel in the fleet. He shook out the reefs of his mainsail and unfurled the foresail and jib, carrying full sail. The effect of this exceeded his most sanguine expectations. "She seemed to 'lift herself out of the water,'" said Mr. Hillman, "shipped no more seas from windward, and by making two points nearer the wind than before, she cleared the objective point without tacking, and then with started sheets she was seen no more by the rest of the fleet who were all compelled to tack-to round the point." In his many accounts of this trip Mr. Hillman was extravagant in his praises of the War Eagle.

This led to a formal race between the Protector and War Eagle from the Capes of the Delaware to Philadelphia; it came off during a heavy northeast gale and as the Protector was distanced at the beginning she drew off and the War Eagle came in alone.

After the death of one of the owners she was sold to parties who used her for dredging for oysters in "forbidden ground" in the Chesapeake; in view of her speed she was enabled to do this and avoid capture in spite of the vessels of the Maryland navy. But growing careless she was "caught napping" by the cruisers and was captured before she could get under way. She was sold by the state and that was the last I heard of her, and I presume she went where the good vessels go.

There was but little difference in the model between the "pungy" and the pilot boat of our Atlantic ports and in general design of the "cup defending" yachts.

The first difference I noticed was in the yacht America, and this was a small one in this case. The after part of the vessel below, which was a mere "skag," was cut away, which enabled the builder to avoid the extravagant rake of post of the "pungy," and to secure a nearly perpendicular one. This modification is now generally adhered to.

The fast ship, whether it was in the form of "pungy," "clipper," the "rover," or the "long, low, black schooner," was particularly an American product; the methods in its production were born in the American ship builder at that time. No model in any country for form or seaworthiness has ever equaled that of 50 years ago—there have been reproductions and imitations, that is all.

DISCUSSION.

The President: Is there any discussion upon this paper?

Capt. W. Hovgaard: I would suggest that if drawings exist of the ships mentioned in the paper, that it would add very considerably to the value of the paper if such drawings are given.

Mr. Nixon: Mr. Cramp says that any requests made for information in regard to these boats or any other

Generated on 2024-08-28 16:19 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

information any one in the society may want, that if they will indicate that in some way, he will answer in writing in the form of a discussion. I think contributions of this sort have a tremendous value to the society—to a society like ours—because from the ripe experience from a man like Mr. Cramp we can gather not only the development of ship building as an art, but the very great effect which the Cramp builders have had on that development, and I do not know of any man in all this country who has done so much in giving information, not only to the general public, but to his associates and friends, as Mr. Cramp. I know the debt this entire country owes him, for I believe no man has done so much to popularize the building of our new navy and the developing and bringing about of the few steps which have been taken in developing a merchant marine. He gave his time and energy and intellect to serve us in Washington, always in the open, and never burrowing, as he considered the cause which he was advocating, the development of a great navy, and a strong navy, to warrant the fullest publicity and it was his opinion that the more the people of this country knew about our navy, and the needs of a merchant marine, the more they would appreciate the necessities of the case, and I think we owe a great deal to Mr. Cramp for the contribution he has been able to give us now, during the closing years of his life.

The President: The secretary has received some remarks on Mr. Cramp's paper, and I will ask Mr. Cox to read a contribution from Mr. W. J. Norton.

Mr. Norton: Some interesting statements regarding early ship building on the Chesapeake can be found in Scharf's "Chronicles of Baltimore," and they are quite interesting in connection with the first paragraph of this paper. At this time (1801) the belligerents in the Napoleonic wars began that series of blockades, decrees and orders in council, which so embarrassed American shipping. Ten years of unexampled prosperity had drawn many daring and skillful business men to Baltimore; and thus to the natural strength of the people was added that strength which comes from new blood. Such men were not to be frightened by paper blockades, especially as these by their very existence, increased the profits of successful enterprise.

This was the great opporutnity for the swift sailing and cleverly named Chesapeake schooners. The extensive inland navigation of the bay and the waters flowing into it, had at an early period encouraged the construction of vessels for that purpose, till the art of building swift sailing schooners of the small size was carried on to great perfection. These vessels built on the Chesapeake furnished models which were gradually improved upon, and adapted to vessels of the larger size, and they were found perfectly suited to the West Indies and even European trade.

The model is said to have originated at St. Michael's in Talbot county, where ship building was handed down from father to son from 1670. Today this town is still famed for its swift sailing "bug-eyes" and Chesapeake canoes.

The model is rather a singular one. The forward body full and high, even to flaring, and the after body lean and tapering under water. The floors were sharp and the vessel sailed with a drag, sometimes drawing as much as 16 ft. aft to 8 ft. forward.

The masts were long and tapering, raking well aft, and their sails, presenting an unusually large spread of canvas, were so admirably cut that none of the propelling force of the wind was wasted.

In the hands of an enterprising merchant they became instruments of extraordinary enterprise. Nothing has contributed so much to the rise of Baltimore as the use of this description of vessels. It was remarkable that they were not successfully imitated outside of the Chesapeake, but such is the fact and although, as we shall see later, they were afterwards copied at this time the Baltimore merchants practically controlled all the fast sailing vessels in America.

The commerce of Baltimore partook of the fluctuations of the times, however. Brilliant successes were followed by reverses and during this period shipping was never without restrictions, but Baltimore suffered least of all and was comparatively prosperous. Her fast sailing vessels and the skill of her seamen in navigating them, gave her advantages in the dangerous European trade possessed by no other port. This species of commerce was carried on mostly from Baltimore, or from other ports on account of Baltimore merchants, in vessels of the Chesapeake construction.

This is the real day of the Baltimore clipper, when the reputation for fast sailing was gained all over the world, and the expression "She sails like a Baltimore clipper," first came into use.

Careful inquiry at Johns Hopkins University, the Maryland Historical Society and the Peabody Institute discloses the fact that practically no primary information has been collected which would throw light upon the derivation of the term "The Baltimore Clipper," or as to the achievements which brought that term into common use throughout the maritime world.

The American Dialect Society has made researches along similar lines on other subjects, but their secretary, Prof. W. E. Meade, states that their records contain nothing on this matter.

It is not improbable that some of the members of the society may have invaluable data which would be made the basis of a paper at some future meeting, and which would throw light upon and possibly clear up what is probably the most interesting and dramatic epoch of the American merchant marine.

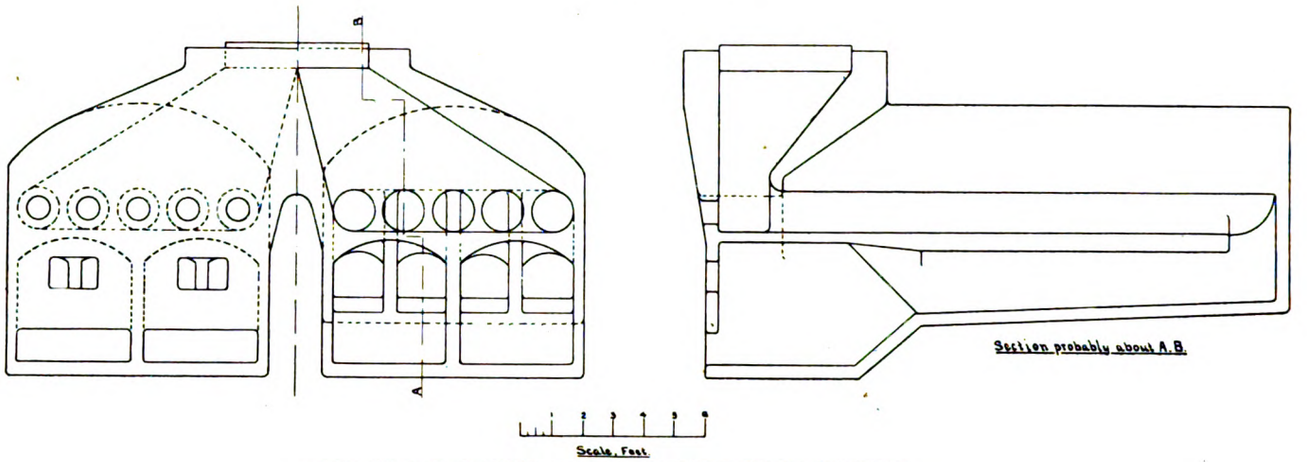
The President: The chair regrets there are no representatives present from the Maine or Massachusetts corps of wooden ship builders. They might take issue with some of these statements as to where the Baltimore clipper ship originated. The secretary desires me to say that the paper marked No. 1½, a description of the U. S. S. Michigan, now called the Wolverine, will be printed as part of the discussion on paper No. 1. It is a pity that a matter of so much historical interest as the construction of the Michigan should not have been set forth with more particularity than is given in this paper, and possibly it may be desirable to print some plans of the vessel in connection with it.

(This paper was written by Mr. Henry Penton as a plea for the preservation of the Michigan and it was through an inadvertence on the part of the society's printer that it appeared in the form of a prepared paper. Obviously it would have been more extensively done had it been designed as a set paper, but the MARINE REVIEW can fortunately supplement it with plans which were drawn by Mr. Penton since the paper was read before the society.)

The paper was as follows:

Henry Penton: Sixty-six years ago there was dragged across the mountains from Pittsburg to Lake Erie the material out of which was constructed what is now, and has been for some years, the oldest iron ship in the world. The trip was not then, as now, a mat-

Generated on 2024-08-28 16:16 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN




PLAN OF THE ORIGINAL BOILERS OF THE GUNBOAT MICHIGAN.

ter of a few hours, when over the same route all the ore necessary to produce this entire ship is transported in half a day and in a few cars. One of the ore trains of the present day indeed carries enough ore in its 80 50-ton cars to produce the material for four such ships. But at that time neither the ore nor the trains were dreamed of. The ship had rounded out a decade of service before the first shipment of ore came from Lake Superior.

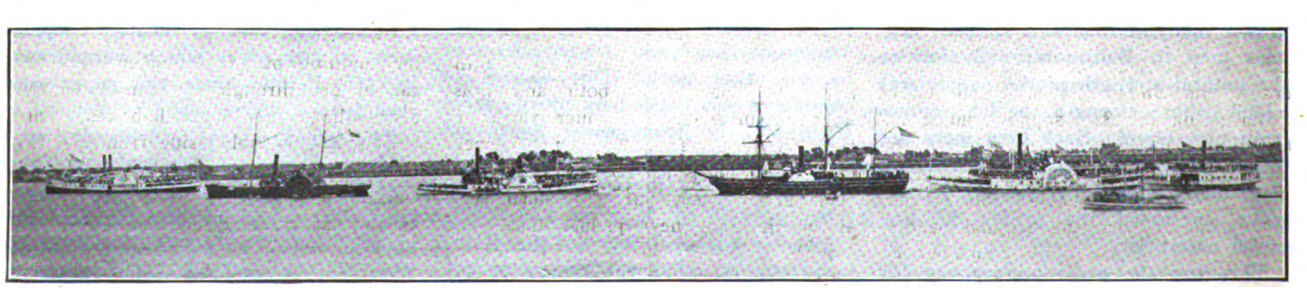
But the plates and angles, bars and beams, bolts and rivets, forgings and castings, were gotten out at Pittsburg, laboriously transported across the mountains and dumped at the hamlet of Erie on the shore of the lake, and out of them grew the U. S. Man-of-War Michigan, which since that time has continued to be the whole United States navy on the great lakes, where treaty obligations restrict naval representation to one ship on each side.

Probably few people are now living who even remember her launching; more probably none who took any part in her construction. She does not amount to much judged by modern standards, but that she was a fine ship in her day we may well believe, and she answers her purpose today just as well as then, which purpose is almost entirely confined to putting in an appearance at the chief lake ports during the season of navigation to enlist recruits for the newer and bigger ships of the modern navy, and acting as drill master at the annual summer practice maneuvers of the naval militia of the lake states. Even the firm who built her, Stackhouse & Tomlinson, of Pittsburg, has passed away. Many a naval officer who has risen to high rank and in his turn passed away, has at one time or another stood his watch on her decks or snored away his watch below on the old Michigan. But the old ship still survives, though the act of March 3, 1905, which authorized two battleships, appropriated her name for one of them and renamed her the Wolverine, and there is no reason why, barring accidents, she should not still be in service at the end of the century.

In the navy list she is rated as an unarmored, unprotected cruiser, with a water-line length of 165 ft.; beam, 27 ft.; displacement, 685 tons; indicated horsepower, 365; speed, 10.5 knots (12 statute miles; coal endurance at 10 knots, 2,240 knots or 224 hours; bunker capacity, 100 tons. She does not cut much of a figure alongside the new Michigan recently launched, with her length of 450 ft., beam 80 ft., displacement, 17,600 tons, 16,500 horsepower and 18½ knots speed. The 8 12-in. guns alone of the new ship would sink the old, even if lightened of all her machinery, coal and stores. One quarter of the new ship's coal supply would do the same thing.

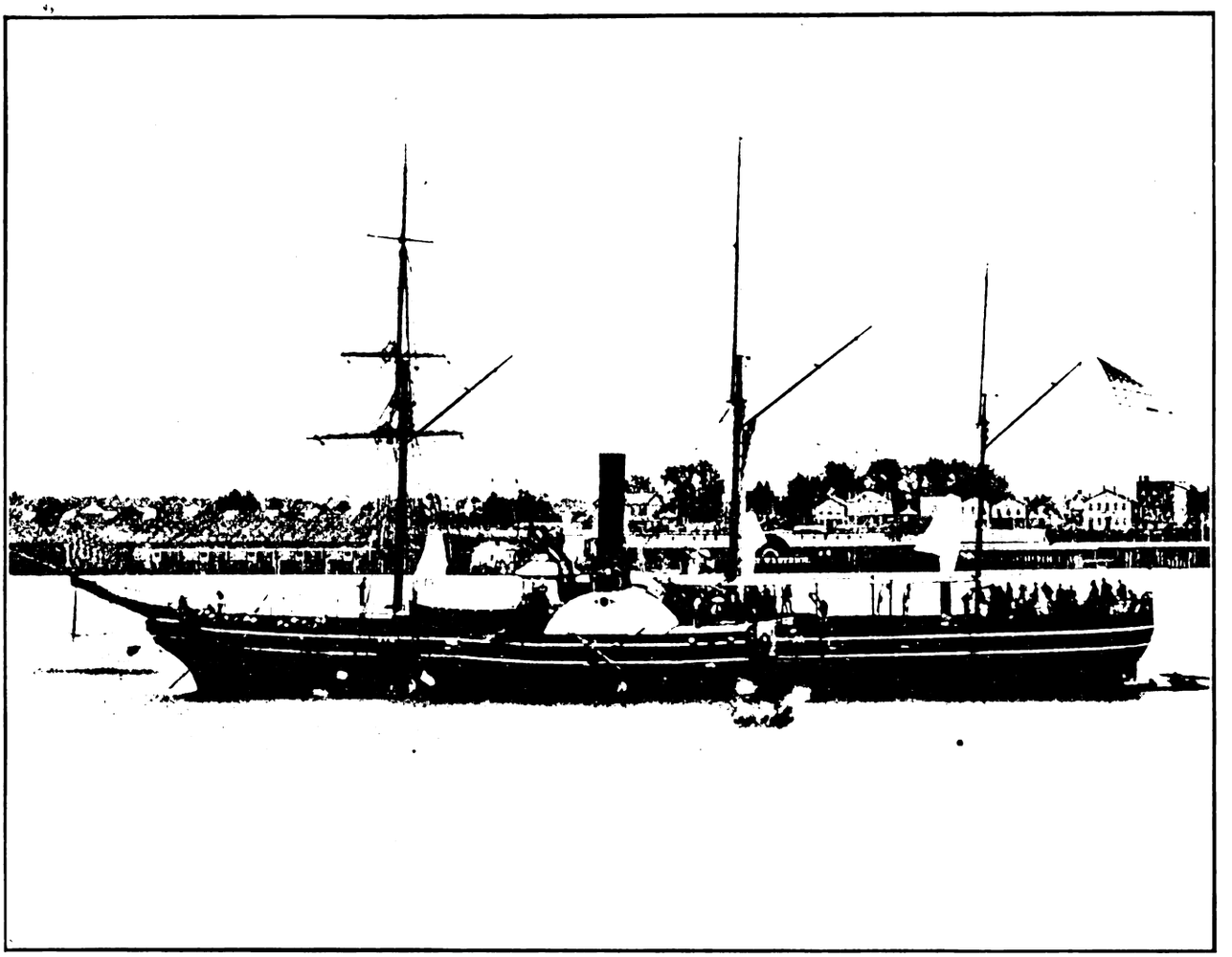
Each in her turn, however, represents the most advanced type of naval construction of her time. But what changes have taken place since the old ship took her first dip in the waters of Lake Erie. The famous Hartford, a wooden ship, and Admiral Farragut's flagship at New Orleans, was not built until the Michigan was 15 years old. About the same time the British and French three-deckers were hammering away at the walls of Sebastopol. She was a veteran when Ericsson's Monitor threw all the navies of the world into the junk-pile, and many and many a generation of fighting ships have come and gone since then. She was 40 years old when the first ships of our so-called new navy were authorized, and they in turn have gone into the discard long years since. Her iron construction was a novelty in naval work, and for years afterwards the United States continued to build wooden ships for its navy, including the famous Kearsarge, which was built 20 years after the Michigan. Even the Constellation, a ship that shares the honors of the old sailing ships of the navy with "Old Ironsides" did not come until 1854.

The Michigan has been a noted ship in other ways, too. Much of our steam engineering knowledge is based upon the early experiments on expansion of steam, superheating, steam-jacketing, condensation, etc., carried out on her by B. F. Isherwood, afterwards engineer-in-chief United States navy, when



THE GUNBOAT MICHIGAN IN A PARADE IN DETROIT RIVER IN 1872.

Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN



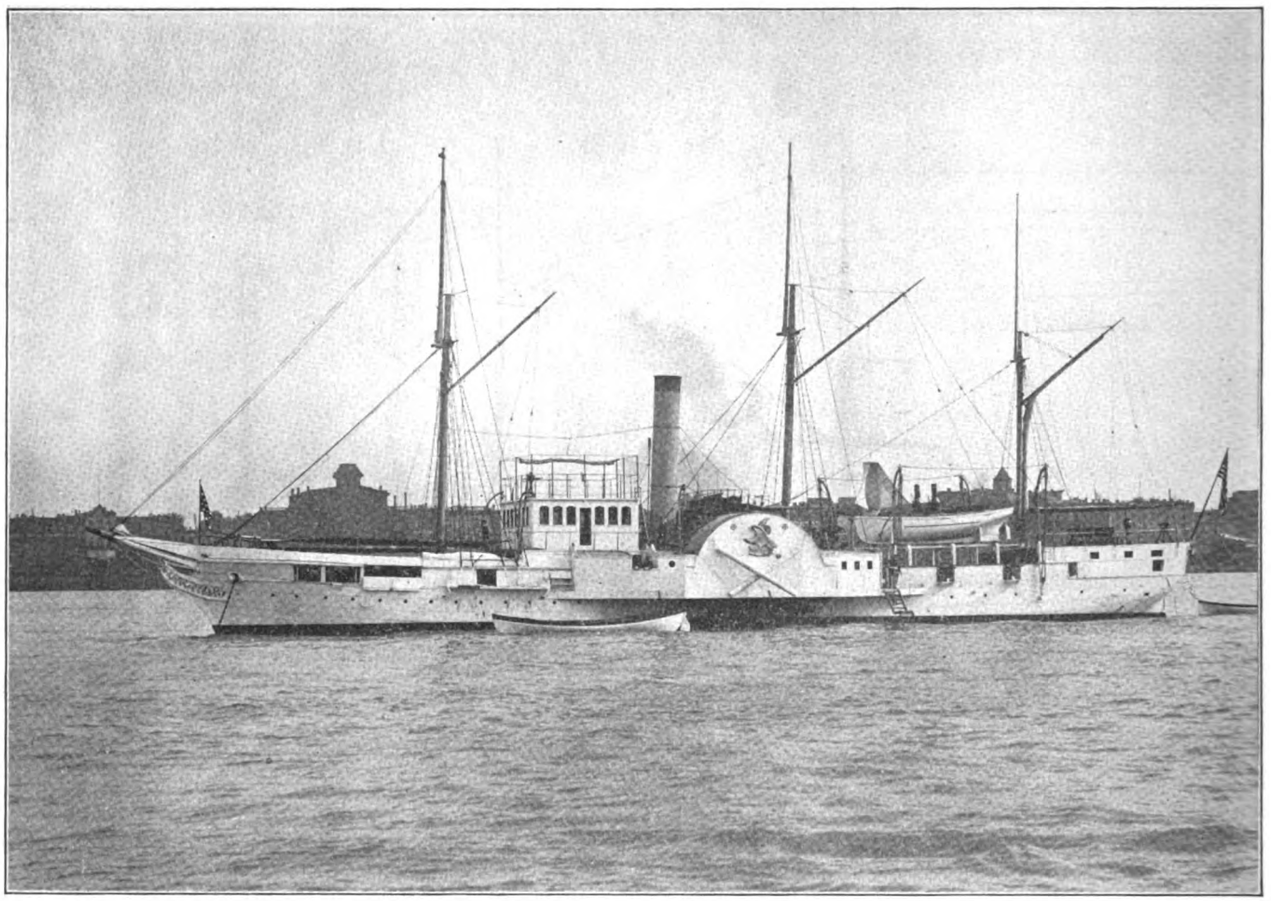
THE GUNBOAT MICHIGAN, A DETAIL OF THE PRECEDING PICTURE, SHOWING HER ORIGINAL RIG.

attached to her. The value of those experiments, and the theories deduced from them, to the world at large are beyond computation, and they are to this day quoted as authority.

The engines are of the simple inclined type, with two cylinders 36 in. diameter, 8 ft. stroke, and although of an antiquated type and despite their age and service, their condition is stated in the bureau reports to be good, while that of many of the comparatively new ships is reported as "fair" or "condemned." They are sufficient for the service required, however, and it is doubtful if even modern designs would be any more satisfactory for the limited duty. An old and rare work, entitled "A Treatise on the Marine Boilers of the United States," published in Philadelphia in 1851, supplies much interesting information regarding the Michigan in early years; she was then considered a remarkable ship. From this it appears that the original paddle-wheels were 21 ft. 10 in. diameter and had each 16 paddles or buckets. Each bucket was 7 ft. 6 in. long, in two parts, and 25 in. wide, also in two widths of 15 in. and 10 in., or four sections to each bucket. The dip of the wheels was 32 in. and the maximum revolutions 22 per minute. The draught of water was 7 ft. 8 in. The boilers were of the "box" type, 8 ft. 6 in. wide, 19 ft. long, and 9 ft. high, and the working steam pressure was 15 pounds per sq. in. The work also includes drawings of the boilers which, while not very complete, are reproduced herewith. The boilers have been redrawn from the original cut which is not very clear in some respects; dotted lines and solid lines not very distinguishable and sections apparently unnatural, but the general design can be grasped. Evidently the steam chimney was common to both and must have involved much boiler work in the ship. These old boilers were of course long since obsolete, and were replaced by others of a modern type, at which time new paddle-wheels of smaller diameter were also fitted. The draught is also increased to 9 ft., no doubt partly due to the increased boiler weights and partly to increased coal capacity made possible by shorter boilers. As originally built the ship was barkentine rigged, but a number of years since this was discarded and a schooner rig substituted. But the hull and engines and most of the equipment, except armament, remain as they were 66 years ago.

A Cleveland paper has suggested that the old ship be sent as a transport of honor with the Michigan delegation who will probably bear the customary silver service to the new Michigan, and that sending her back be forgotten and something more modern be sent to take her place. There is not much likelihood that the old ship will ever float on anything but fresh water since she cannot get through the canals without dismantling her paddle-boxes and wheels, and entirely aside from the fact that she is just as much service to the country as a newer and more modern, as well as more costly, ship would be, we hope there is enough sentiment among us to keep the oldest iron ship in the world in service as long as she will

Generated on 2024-08-28 16:22 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN



THE OLD GUNBOAT MICHIGAN, NOW THE WOLVERINE, AS SHE APPEARS TODAY WITH HER ALTERED RIG.

hold together. We are called a practical people, without any regard for that which is old even when fully as serviceable as the new, yet we have spent and continue to spend a lot of money on "Old Ironsides" for sentimental reasons alone. The Wolverine has not only a sentimental value but she is in active service, and she has done what the Constitution never did—contribute much to material progress, and she is likely for many long years to come to make tangible returns for the money spent on her. The most graceful thing the department can do, the greatest compliment it can pay, not only to the old ship herself but to our neighbors across the line, is to continue her in commission. We do not need, and it is to be hoped we will never need, a ship of war on the great lakes; our friends maintain none, and a newer and more offensive ship would be merely a gratuitous evidence of mistrust.

Mr. D. W. Taylor: In reference to the statements made by Mr. Penton in connection with the Michigan, I think it would be well also to put on record, which I think he does not do—I have only had a glance at the paper—the fact that the Michigan was the first iron man-of-war ever built. I have had occasion to try to find out the facts, and am quite sure that is true—that up to the time of the Michigan a man-of-war had never been built of iron, because steel had never been used in ships in those days.

The President: The chair thinks it is proper to announce that the author of the paper describing the Michigan, Mr. Penton, submitted to the council of the society a proposed resolution asking the navy department, in effect, to continue the Michigan in service and not to replace that vessel by a new one, which has been proposed. The council, however, decided that a resolution of that kind was out of order and has not presented it to the society for that reason.

PRACTICAL METHODS OF CONDUCTING TRIALS OF VESSELS.

Col. E. A. Stevens in reading his paper "Practical Methods of Conducting Trials of Vessels," prefaced it by saying:

"There are several defects in the paper. I wish to draw attention to the fact that the table printed on page 4 of the paper is not the table intended to be printed. I intended to publish a table of calculations for tide curves, somehow they got the table of the apparent revolutions per minute, time of tide."

This paper will be discussed in next week's issue.

---

The Pratt & Whitney Co., Hartford, Conn., have put out a beautiful catalog on multiple drills. It illustrates copiously a line of drilling machines adapted for various classes of work. Most of these machines are kept in stock so that any type or size can be promptly furnished. Some new features have been added by which these machines are made more suitable for general use. The heads are made to take a standard number of spindles and sent out fitted with a full number of driving gears, so that if the purchaser finds it desirable to increase the capacity after receiving the machine he may do so by ordering additional spindles up to the full complement for a given machine.

Generated on 2024-08-28 16:20 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

The
"EUGENE ZIMMERMAN"
Is on its THIRD season as a Jones Stoker fired steamer

The UNDER-FEED STOKER CO. of AMERICA
Marquette Building
CHICAGO

A NEW BOOK
The Lake Pilots' Hand-Book
Compiled By
Capt. George Trimble.
This book contains useful knowledge to the Great Lakes, and Great Lakes Piloting, that should be useful to the professional as well as the beginner. The need of a handy book of reference and of general information on the subject of the Great Lakes led the author to undertake the preparation of this work. The book is cloth bound, size 5 1-2 x 8 inches and contains some 230 pages.
The price is $1.25, carriage prepaid.
BOOK DEPARTMENT
The Penton Publishing Co.,
Cleveland, O.

Geo. L. McCurdy
169 Jackson Boulevard
CHICAGO ILLINOIS
INSURANCE
HULLS and CARGOES
DIRECT REPRESENTATIVE OF LEADING AMERICAN AND FOREIGN UNDERWRITERS

CORDAGE
We make good rope--the best that can be made. When you buy cordage of us you get rope that has more than thirty years of experience twisted into it. Experience in buying raw material in the world's market --experience in making (in our own mill)-- and experience in advising how the rope should be used to give the best service.
If you want as good rope as we make plus our experience, write us and we shall be glad to give you the benefit of our advice and quote you prices.
THE UPSON-WALTON CO.
Dept. C, 1304 River Ave.
CLEVELAND, OHIO

Aids to Navigation
are of vital importance to vessel interests.
SCHERZER ROLLING LIFT BRIDGES
aid navigation and meet with the approval of all vessel interests, because of the wide and unobstructed channel provided for navigation, enabling vessels to pass easily and rapidly through the draw. Accidents and damages from collisions with center piers absolutely avoided.
The Scherzer Rolling Lift Bridge Co.
Main Offices: 1616 Monadnock Block,
CHICAGO, U. S. A.
Cable Address: Scherzer, Chicago.

The Martin-Barriss Co.
654 Seneca Street CLEVELAND, OHIO
IMPORTERS AND MANUFACTURERS OF
MAHOGANY
WHITE MAHOGANY
*and all Native Cabinet Woods*
High Grades of Kiln Dried Woods for Cabin Work and Inside Trim
*WHITE OAK TIMBERS AND PLANK*
Constantly on Hand and Sawed to Order on Short Notice

Generated on 2024-08-28 16:18 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

# ADVERTISERS

*The Star indicates alternate insertions, the Dagger once a month.*


Almy Water Tube Boiler Co.. 37
†American Balance & Valve Co. —
American Injector Co..... 11
American Line ..... 50
American Manganese Bronze Co. ..... 38
American Ship Building Co... 4
American Ship Windlass Co.. 2
†Anderson, Gilbert ..... —
Armstrong Cork Co..... 45
†Asbestos Composition Flooring Co. ..... —
†Ashton Valve Co..... —
Atlantic Works ..... 50

Babcock & Penton..... 49
Baker, Howard H., & Co..... 38
Belcher, Fred P..... 48
*Boat Handling Gear Co..... —
Boland & Cornelius..... 48
*Boston & Lockport Block Co. —
†Boucher Mfg. Co., The H. E. —
Bowers, L. M., & Co..... 43
Breymann, G. H., & Bros..... 39
Briggs, Marvin ..... 38
†Brown Hoisting Machinery Co. ..... —
Buffalo Dredging Co..... 39
Buffalo Dry Dock Co..... 5
Bunker, E. A..... 52

†Camden Anchor-Rockland Machine Co. ..... —
Clark Wireless Telegraph & Telephone Co. ..... 9
Chase Machine Co..... 36
Chicago Ship Building Co.... 4
Cleveland & Buffalo Transit Co. ..... 51
†C. & C. Electric Co..... —
Cleveland City Forge & Iron Co. ..... 50
*Collingwood Ship Building Co. —
†Columbian Rope Co..... —
Continental Iron Works..... 2
†Copeland Co., E. T..... —
Cory, Chas., & Son..... 50
Cook's Sons, Adam..... 45
Cramp, Wm., & Sons S. & E. B. Co. ..... 8
†Crescent Machine Co..... —
Curr, Robert ..... 49

Dake Engine Co. ..... 2
Delany, P., & Co..... 37
Detroit Ship Building Co..... 4
Dixon, Joseph, Crucible Co... 43
Donnelly Salvage & Wrecking Co. ..... 45
Douglas, G. L., Jr..... 48
Drein, Thos., & Son..... 45
Dunbar & Sullivan Dredging Co. ..... 39
†Durable Wire Rope Co..... —

Ekstrom, G. ..... 49
Elphicke, C. W., & Co..... 48
†Empire Ship Building Co... —

Falls Hollow Staybolt Co..... 37
Fix's, S., Sons..... 50
Fletcher, W. & A., Co..... 50
Fogg, M. W..... 45
Fore River Ship Building Co.. 50
Furstenau, M. C..... 49

General Electric Co..... 52
Gilchrist, Albert J..... 48
*Gillett & Eaton ..... —
†Goldschmidt Thermit Co.... —
Goulder, Holding & Masten.. 48
Great Lakes Dredge & Dock Co. ..... 39
Great Lakes Engineering Wks. 12
Great Lakes Register..... 11
†Great Lakes Supply Co..... —
*Great Lakes Towing Co..... —
†Griscom-Spencer Co. ..... —

Hall, John B..... 48
Hanna, M. A., & Co..... 3
Hawgood, W. A., & Co..... 48
†Hayward Co., The..... —
Helm, D. T., & Co..... 48
Holmes, Samuel ..... 48
Hoyt, Dustin, Kelley, McKeehan & Andrews..... 48
Hunt, Robert W., & Co..... 49
Hutchinson & Co..... 48
Hyde Windlass Co..... 51
Hyner, P. D..... 48

†Ideal Pump Governor Co.... —
Industrial Law League, Inc... 43
International Mercantile Marine Co. ..... 50

Jenkins Bros. ..... 52
Jenkins, Russell & Eichelberger ..... 48
Johnston Brothers..... 37

Kahnweiler's Sons, David..... 45
Katzenstein, L., & Co..... 45
Kidd, Joseph ..... 49
Kingsford Foundry & Machine Works ..... 37
Kremer, C. E..... 48
Knudsen-Von Kothen Mfg. Co. 51

*Le Mois Scientifique et Industrial ..... —
†Linch, Chas. S., N. A. & M. E. ..... —
Lorain Coal & Dock Co..... 49
Lundin, A. P..... 52

McCarthy, T. R..... 48
McCurdy, Geo. L..... 35
MacDonald, Ray G..... 48
Manistee Iron Works Co..... 37
*Marine Iron Co..... —
Marshall, Alexander ..... 48
Martin-Barriss Co. ..... 35
Maryland Steel Co..... 10
Mehl, Edward ..... 48
†Michigan Lubricator Co..... —
Milwaukee Dry Dock Co..... 5
Mitchell & Co..... 48
Morse, A. J., & Son..... 45

Nacey & Hynd ..... 49
National Cork Co..... 45
*National Tube Co..... —
Nevins & Smith..... 49
Newport News Ship Building & Dry Dock Co..... 6
†New York Mallet & Handle Works ..... —
New York Ship Building Co.. 7
†Nicholson Ship Log Co..... —
Northern Dredge Co..... 39
†Nugent & Co., Wm. W..... —

O'Connor, J. J..... 48
Otis Steel Co..... 9

Parker Bros. Co..... 48
†Peckham, O. P..... —
Penberthy Injector Co..... 52
Pickands, Mather & Co..... 3
Pittsburg Coal Co..... 3

Quintard Iron Works Co..... 50

Richardson, W. C..... 48
*Ritchie, E. S., & Sons..... —
Roberts Safety Water-Tube Boiler Co. ..... 37
Roelker, H. B..... 45
†Rogers Steam Oil Separator Co. ..... —
Root, W. O..... 49
Ross Valve Co..... 51

Safety Car Heating & Lighting Co. ..... 9
Scherzer Rolling Lift Bridge Co. ..... 35
Schrader's, A., Son, Inc..... 45
†Seneca Chain Co..... —
Shaw, Warren, Cady & Oakes 48
*Shelby Steel Tube Co..... —
(See National Tube Co.)
Sheriffs Mfg. Co..... 43
Shipping World Year Book... 51
Siggers & Siggers..... 50
Smith Coal & Dock Co., Stanley B. ..... 3
Smooth-On Mfg. Co..... 51
Speddy, Joseph H..... 48
Starke, C. H., Dredge & Dock Co. ..... 39
Stratford, Geo., Oakum Co.... 43
Sullivan, M. ..... 39
Sullivan, D. ..... 48
†Superior Iron Works..... —
Superior Ship Building Co.... 4

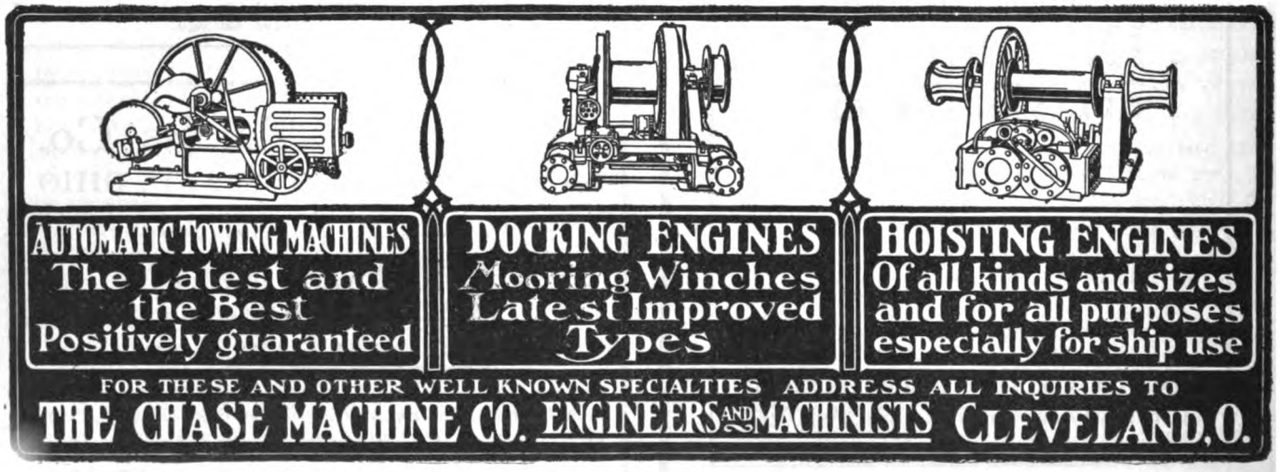
Thornycroft, John I., & Co... 43
Tietjen & Lang Dry Dock Co. 50
*Toledo Fuel Co..... —
Toledo Ship Building Co.... 5
Trout, H. G..... 43
Truscott Boat Mfg. Co..... 2

Upson-Walton Co. ..... 35
Under-Feed Stoker Co. of America ..... 35

Vance & Joys Co..... 48

Walker, Thos., & Son..... 3
*Watson-Stillman Co. ..... —
†Wilby, Carlton ..... —
Willcox, Peck & Hughes..... 38
†Willoughby, A. B..... —
Wood, W. J..... 49




AUTOMATIC TOWING MACHINES
The Latest and the Best
Positively guaranteed
DOCKING ENGINES
Mooring Winches
Latest Improved Types
HOISTING ENGINES
Of all kinds and sizes and for all purposes especially for ship use
FOR THESE AND OTHER WELL KNOWN SPECIALTIES ADDRESS ALL INQUIRIES TO
THE CHASE MACHINE CO. ENGINEERS AND MACHINISTS CLEVELAND, O.


Generated on 2024-08-28 16:21 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

# THE ROBERTS
SAFETY WATER-TUBE
# BOILER CO.

Manufacturers of
High Grade

## Marine Water Tube Boilers

Generators of the Highest Quality of Steam

OVER 1500 IN USE

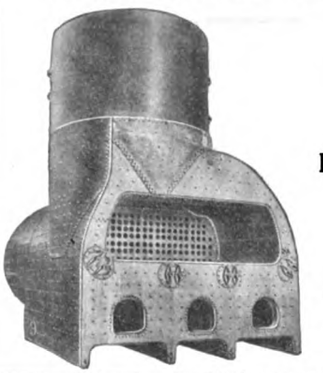
Send for circulars
and stock sheet

MAIN OFFICE
39 Cortlandt St. New York City
Phone 599 Cortlandt

Works: Red Bank, N. J.
Phone, 49 Red Bank

Cable Address
"Bruniva"

## MARINE BOILERS.



MARINE REPAIRS

Newburgh Steam
Boiler Works

P. DELANY & CO.
NEWBURGH, N. Y.

Geo. R. Ray, Pres. Thomas Ray, V. P. & Treas. J. R. Ray, Sec'y.

## Manistee Iron Works Co.

Builders of
HIGH-GRADE MARINE ENGINES,
BOILERS AND PUMPING MACHINERY

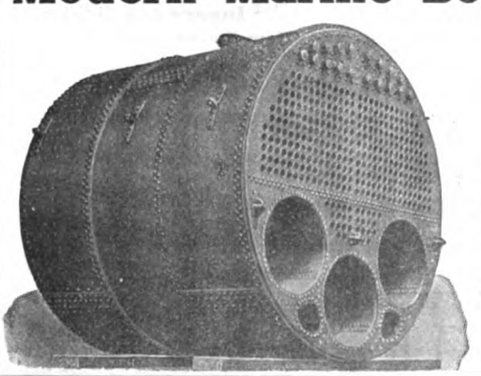
*Did It Ever Occur to You*

that we make the best Vertical Single Acting Steam Bilge Pump in the world? We do—and the price is right, too.

SEND FOR CUT AND DESCRIPTION

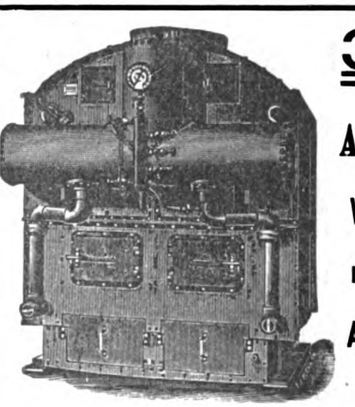
MANISTEE, MICHIGAN

## Modern Marine Boilers



*Write*

Johnston
Brothers
Ferrysburg,
Michigan



350 STEAM VESSELS
Now Equipped With
ALMY'S PATENT
SECTIONAL
Water Tube Boilers
Bear Evidence of Their
Excellent Qualities

ALMY WATER-TUBE
BOILER CO.
PROVIDENCE, R. I.

FALLS HOLLOW STAYBOLT BARS
ANY SIZE, OUTSIDE OR INSIDE DIAMETER.
AVERAGE LENGTH OF HOLLOW BARS
EIGHT TO TEN FEET.
FALLS HOLLOW STAYBOLT Co
BOTH HOLLOW AND SOLID,
MADE OF BEST QUALITY DOUBLE REFINED CHARCOAL
IRON OR STEEL. CUYAHOGA FALLS, O. U.S.A.

Staybolts are dangerously reduced in strength in the process of tell-tale drilling

HOLLOW STAYBOLTS

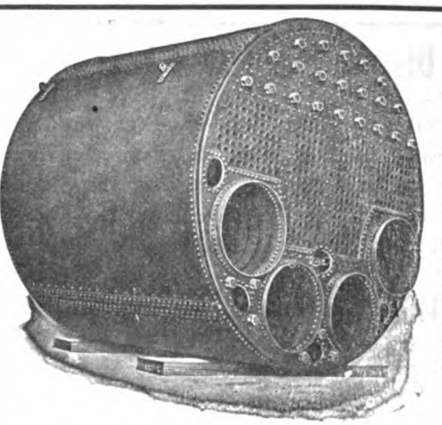
have the tell-tale hole rolled in the bar.

IN SERVICE

renders absolute safety and great endurance.

*Send for Important Literature and Prices.*

FALLS HOLLOW STAYBOLT CO., Cuyahoga Falls, Ohio
STAYBOLT IRON A SPECIALTY.



MARINE
BOILERS

OF ALL TYPES

KINGSFORD
FOUNDRY &
MACHINE
WORKS,
*Oswego, N. Y.*


Generated on 2024-08-28 16:20 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

# CLASSIFIED ADVERTISING SERVICE

WANTED. Ship Draftsmen and Assistant Ship Draftsmen. Pay from $2.00 to $5.04 per diem. A competitive examination will be held at the Navy Yard, Brooklyn, N. Y., December 21, 1908, for the purpose of establishing an eligible register of ship draftsmen and assistant ship draftsmen. For application and further information address, "Commandant, Navy Yard, Brooklyn, N. Y."

TUG FOR SALE. BUILT IN 1896. Well kept up. Suitable for fishing or towing, 50 ft. long, 14 beam, double furnace, Scotch boilers. Will sell cheap if taken at once. Address Capt. James Rolson, care Ind. T. Co., 144 South Water St., Chicago, Ill.

PRICE, $3.00 NET.

**BOILER WATERS**
SCALE, CORROSION, FOAMING,
BY
William Wallace Christie,
*M. Am. Soc. M. E., Consulting Engineer.*

This work has for its object to furnish steam-users with information regarding water, its use, and troubles arising from the use of water, and remedies that may be used or applied; the gain being more efficient generation of steam.

For sale by
THE PENTON PUBLISHING CO.
CLEVELAND, OHIO.

**FOR SALE**
14-24-40 x 30 Triple Expansion Engine.
22-50 x 30 F. & A. Compound Engine.
3 Steam Windlasses.
2 Steam Steerers.
Surface Condensers—200 to 3,500 sq. ft.
Steam Driven Jet Condensers.
Steam Driven Blowers.
30 K. W., 50 K. W., 75 K. W. Lighting Sets.
6 Almy Boilers.
Fire and Wrecking Pumps — Diving Gears.

**MARVIN BRIGGS, Inc.**
154 Nassau St., New York City.

PASSENGER STEAMER CHEQUAMEGON. Built in 1903. Allowed 400 passengers. Triple-expansion engines. 175 lb. steam pressure. 125 ft. over all. 22 ft. beam. Electric lights. Search light. Steam steering gear. Draught, 8 ft. 10 in. Rated A1. Information and price apply to C. A. Webb, Traverse City, Michigan.

TUG ARTHUR JONES FOR Sale, 16 x 18, 140 pounds steam, hull recently rebuilt and all in good working order. E. M. Graves, 17 Commercial Bank Bldg., Cleveland, O.

SAND SUCKER FOR SALE, IN operation for balance of season. Capacity 250 yards or better. Reason for selling, business demands larger boat. Address E. C. Calvert, Detroit, Mich.

Engineer Office, U. S. Army, Room N, Customhouse, New Orleans, La., Nov. 21, 1908.—Sealed proposals for furnishing and installing ice machine, refrigerating and distilling plant, in machine shop building at Burrwood, La., will be received at this office until 11 o'clock a. m., Dec. 21, 1908, and then publicly opened. Information on application. Lansing H. Beach, Lt. Colonel, Engineers.

WANTED. First class Ship Draftsman at $5.04 per diem. A competitive examination will be held at the Navy Yard, Norfolk, Va., November 30, 1908, to fill the above position. For application and further information, address, "Commandant, Navy Yard, Norfolk, Va."

PROPOSALS FOR SIDE HAUL RAILWAY DRY DOCK.—Mississippi River Commission, Liggett Building, St. Louis, Mo., Oct. 24, 1908.—Sealed proposals for constructing side haul railway dry dock will be received here until 12 noon, standard time, Nov. 28, 1908, and then publicly opened. Information furnished on application. G. R. LUKESH, Capt., Eng'rs, Sec'y.

WHIRLEY DERRICK WANTED in first-class condition, 50 to 60 ft. boom, capable of handling two-yard bucket of sand. Address E. C. Calvert, Detroit, Mich.

ANY ONE WHO OWNS AND desires to sell paintings, drawings, sketches or models of old lake sailing vessels, steamers, etc., will please write Richard P. Joy, 510 Penobscot Bldg., Detroit, Michigan.

**Howard H. Baker & Co.**

BUFFALO, N. Y.

**HATCH COVERS**

Made of

**Wilford's**
**Waterproof Flax Duck**

**WILLCOX, PECK & HUGHES**
Average Adjusters — Insurance Brokers
3 South William Street
NEW YORK

**HULLS AND CARGOES**

We place insurances in the most advantageous markets, and have unequaled facilities for procuring, in the interests of our clients, the best obtainable rates and terms from the strongest Foreign and Home companies.

BRANCHES:
Cleveland Chicago Buffalo Minneapolis
Boston Seattle New Orleans

Represented by
C. T. BOWRING & CO., (Insurance) LTD.
Winchester House and at "Lloyd's", London
WE REPRESENT THE ASSURED

**Time and Distance Tables for Lake Ships**

A set of tables showing the time required at different rates of speed, 8 to 15 miles an hour, to cover distances between all ports on the Great Lakes. A time saver to the vessel owner or vessel agent as well as captain or engineer. Send for it on approval.

**Regular Price, $1.00**

A quantity of them, very slightly shelf-worn, will be sold, while they last, for

**25c each**

MARINE REVIEW, • Cleveland, Ohio

**AMERICAN MANGANESE BRONZE COMPANY**
SOLE MANUFACTURERS

MANGANESE BRONZE. — HYDRAULIC BRONZE.

SPARE'S BRONZE TRADE MARK

**WHITE BRONZE**

U. S. GOVERNMENT COMPOSITIONS
INGOTS, FORGINGS, RODS, SHEETS
MARINE CASTINGS & PROPELLERS
UP TO 20,000 lbs. EACH.

99 JOHN STREET NEW YORK
CHICAGO, 552 FULTON STREET — PHILADELPHIA, ARCADE BUILDING
CLEVELAND, 1010 WILLIAMSON BUILDING — BUFFALO, 29 ERIE CO. BANK BUILDING

Generated on 2024-08-28 16:18 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN

**Great Lakes Dredge & Dock Company**

RIVER AND HARBOR IMPROVEMENTS

Foundations, Bridges, Piers, Breakwaters, Lighthouses, Tunnels, Pneumatic and Submarine Work.

CHICAGO

DULUTH CLEVELAND SAULT STE. MARIE

AMHERSTBURG, ONT.

**M. SULLIVAN**

DREDGING OF ALL KINDS

THE REMOVING OF DEEP WATER EARTH AND ROCK A SPECIALTY. - - -

721 West Ferry St.

BUFFALO, - - - N. Y.

**G. H. Breymann & Bro's**

CONTRACTORS FOR PUBLIC WORKS

Dredging, Dock Building, Etc.

5, 6 AND 7 MARINE BUILDING
TOLEDO, OHIO.

**C. H. STARKE DREDGE & DOCK CO.,**

Contractors for Public Works.

DREDGING, PILE DRIVING,
AND
SUBMARINE PIPE LAYING.

Canal Street, West of First Avenue,

Milwaukee, - - Wisconsin.

**NORTHERN DREDGE COMPANY**

Dipper and Clam Shell Dredges Especially Equipped for Rock Work and for Very Deep Dredging.

General Contractors on all MARINE WORK

Providence Bldg., DULUTH, MINN.

**Buffalo Dredging Co.**

GENERAL CONTRACTORS
ON
SUBMARINE WORK

Office
D. S. Morgan Bldg.

BUFFALO, N. Y.


Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google

Digitized by Google

Original from UNIVERSITY OF MICHIGAN

# BUYERS' DIRECTORY

*Advertisements can be found readily by reference to the Alphabetical Index.*

## AGENTS (Vessel and Freight).

Belcher, Fred P., Winnipeg, Man.
Boland & Cornelius, Buffalo, N. Y.
Douglas, G. L., Duluth, Minn.
Elphicke & Co., C. W., Chicago, Ill.
Hall, John B., Buffalo, N. Y.
Helm & Co., D. T., Duluth, Minn.
Hawgood & Co., W. A., Cleveland, O.
Holmes, Samuel, New York, N. Y.
Hutchinson & Co., Cleveland, O.
McCarthy, T. R., Montreal, Canada.
Mehl, Edward, Erie, Pa.
Mitchell & Co., Cleveland, O.
O'Connor, J. J., Port Arthur, Ont.
Parker Bros., Ltd., Detroit, Mich.
Richardson, W. C., Cleveland, O.
Sullivan & Co., D., Chicago, Ill.
Vance & Joys Co., Milwaukee, Wis.

## ANCHORS.

Bowers & Co., L. M., Binghamton, N. Y.
Upson-Walton Co., Cleveland, O.

## ARCHITECTS (Naval).

Babcock & Penton, Cleveland, O.
Curr, Robert, Cleveland, O.
Ekstrom, G., Detroit, Mich.
Kidd, Joseph, Duluth, Minn.
Linch, Chas. S., N. A. & M. E., Philadelphia, Pa.
Nacey & Hynd, Cleveland, O.
Nevins & Smith, Chicago and Cleveland.
Wilby, Carlton, Detroit, Mich.
Wood, W. J., Chicago, Ill.

## APPARATUS (Steering).

Akers Steering Gear Co., Chicago, Ill.
American Ship Building Co., Cleveland, O.
Chase Machine Co., Cleveland, O.
Dake Engine Co., Grand Haven, Mich.
Detroit Ship Building Co., Detroit, Mich.
Hyde Windlass Co., Bath, Me.
Sheriffs Mfg. Co., Milwaukee, Wis.

## APPARATUS (Submarine Diving).

Morse & Son, A. J., Boston, Mass.
Schrader's Son, Inc., A., New York, N. Y.

## ARMORS (Submarine).

Morse & Son, Inc., Andrew J., Boston, Mass.
Schrader's Son, Inc., A., New York, N. Y.

## ATTORNEYS AND PROCTORS IN ADMIRALTY

Gilchrist, Albert J., Cleveland, O.
Goulder, Holding & Masten, Cleveland, O.
Hyner, P. D., Erie, Pa.
Hoyt, Dustin, Kelley, McKechan & Andrews, Cleveland, O.
Jenkins, Russell & Eichelberger, Cleveland, O.
Kremer, C. E., Chicago, Ill.
MacDonald, Ray G., Chicago, Ill.
Marshall, Alexander, Duluth, Minn.
Shaw, Warren, Cady & Oakes, Detroit, Mich.

## BAROMETERS, GLASSES, ETC. (Marine).

Ritchie & Sons, E. S., Brookline, Mass.

## BARS (Iron or Steel—Hollow Staybolt).

Falls Hollow Staybolt Co., Cuyahoga Falls, O.

## BEARING METALS (White Bronze).

American Manganese Bronze Co., New York, N. Y.

## BELLS (Engine Room Telegraph Call, Etc.).

Cory & Son, Chas., New York, N. Y.

## BLOCKS, SHEAVES, ETC.

Boston & Lockport Block Co., Boston, Mass.

## BOATS (Builders).

Drein, Thos., & Son, Wilmington, Del.
Truscott Boat Mfg. Co., St. Joseph, Mich.

## BOILERS.

Almy Water Tube Boiler Co., Providence, R. I.
American Ship Building Co., Cleveland, O.
Atlantic Works, East Boston, Mass.
Briggs, Marvin, New York, N. Y.
Chicago Ship Building Co., Chicago, Ill.
Copeland Co., E. T., New York.
(Copeland Scotch Improved)
Cramp, Wm., & Sons, Philadelphia, Pa.
Delany, P., & Co., Newburgh, N. Y.
Detroit Ship Building Co., Detroit, Mich.
Fletcher, W. A., & Co., Hoboken, N. J.
Fore River Ship Building Co., Quincy, Mass.
Great Lakes Engineering Works, Detroit, Mich.
Griscom-Spencer Co., New York, N. Y.
Johnston Brothers, Ferrysburg, Mich.
Kingsford Foundry & Machine Works, Oswego, N. Y.
Maryland Steel Co., Sparrow's Point, Md.
Milwaukee Dry Dock Co., Milwaukee, Wis.
New York Ship Building Co., Camden, N. J.
Quintard Iron Works Co., New York, N. Y.
Roberts Safety Water Tube Boiler Co., New York, N. Y.
Superior Ship Building Co., Superior, Wis.
Toledo Ship Building Co., Toledo, O.

## BRASS GOODS.

Michigan Lubricator Co., Detroit, Mich.
Penberthy Injector Co., Detroit, Mich.

## BRIDGES.

Scherzer Rolling Lift Bridge Co., Chicago, Ill.

## BRONZE.

American Manganese Bronze Co., New York, N. Y.

## BRONZE (Manganese).

American Manganese Bronze Co., New York, N. Y.

## BUCKETS (Ore and Coal).

Brown Hoisting Machinery Co., Cleveland, O.
Hayward Co., The, New York, N. Y.

## BUOYS, BOATS, PRESERVERS, ETC. (Life).

Armstrong Cork Co., Pittsburg, Pa.
Drein & Son, Thos., Wilmington, Del.
Kahnweiler's Sons, David, New York, N. Y.
Lundin, A. P., New York, N. Y.
National Cork Co., Brooklyn, N. Y.

## BUOYS (Gas).

Safety Car Heating & Lighting Co., New York, N. Y.

## CANVAS.

Baker & Co., H. H., Buffalo, N. Y.
Upson-Walton Co., Cleveland, O.

## CAPSTANS.

American Ship Windlass Co., Providence, R. I.
Chase Machine Co., Cleveland, O.
Dake Engine Co., Grand Haven, Mich
Hyde Windlass Co., Bath, Me.

## CAPSTANS (Steam).

Chase Machine Co., Cleveland, O.

## CASTINGS (Brass and Bronze).

American Manganese Bronze Co., New York, N. Y.
Griscom-Spencer Co., New York, N. Y.
Cramp, Wm., & Sons, Philadelphia, Pa.
Fore River Ship Building Co., Quincy, Mass.
Great Lakes Engineering Works, Detroit, Mich.

## CASTINGS (Steel).

Otis Steel Co., Cleveland, O.

## CEMENT. (Iron for Repairing Leaks.)

Smooth-On Mfg. Co., Jersey City, N. J.

## CHAINS.

Seneca Chain Co., Kent, O.

## CHANDLERS (Ship).

Baker, Howard H., & Co., Buffalo, N. Y.
Great Lakes Supply Co., Buffalo, N. Y., and Duluth, Minn.
Griscom-Spencer Co., New York, N. Y.
Upson-Walton Co., Cleveland, O.

## CHARTS.

Penton Publishing Co., Cleveland, O.

## CIRCULATORS (Automatic).

Copeland Co., E. T., New York, N. Y.

## CLOCKS AND CHRONOMETERS (Marine).

Ritchie, E. S., & Sons, Brookline, Mass.

## CLOTH (Waterproof).

Bunker, E. A., New York, N. Y.

## COAL (Producers and Shippers).

Hanna, M. A., & Co., Cleveland, O.
Lorain Coal & Dock Co., Cleveland, O.
Pickands, Mather & Co., Cleveland, O.
Pittsburg Coal Co., Cleveland, O.
Toledo Fuel Co., Toledo, O.

## COMPASSES.

Ritchie, E. S., & Son, Brookline, Mass.

## COMPOUNDS (Lubricating).

Cook's Sons, Adam, New York, N. Y.

## CONDENSERS.

Great Lakes Engineering Works, Detroit, Mich.

## CONTRACTORS (Dredging).

Breymann & Bros., G. H., Toledo, O.
Buffalo Dredging Co., Buffalo, N. Y.
Dunbar & Sullivan Dredging Co., Buffalo, N. Y.
Great Lakes Dredge & Dock Co., Chicago, Ill.
Northern Dredge Co., Duluth, Minn.
Starke Dredge & Dock Co., C. H., Milwaukee, Wis.
Sullivan, M., Buffalo, N. Y.

## CONTRACTORS. (Pile Driving and Submarine.)

Buffalo Dredging Co., Buffalo, N. Y.
Dunbar & Sullivan Dredging Co., Buffalo, N. Y.
Great Lakes Dredge & Dock Co., Chicago, Ill.
Parker Bros. Co., Ltd., Detroit, Mich.
Starke Dredge & Dock Co., C. H., Milwaukee, Wis.
Sullivan, M., Buffalo, N. Y.

## CONTRACTORS (Public Work).

Breymann Bros., G. H., Toledo, O.
Buffalo Dredging Co., Buffalo, N. Y.
Dunbar & Sullivan Dredging Co., Buffalo, N. Y.
Griscom-Spencer Co., New York, N. Y.
Great Lakes Dredge & Dock Co., Chicago, Ill.
Starke Dredge & Dock Co., C. H., Milwaukee, Wis.
Sullivan, M., Buffalo, N. Y.

Generated on 2024-08-28 16:17 GMT / https://hdl.handle.net/2027/mdp.39015043584435
Public Domain, Google-digitized / http://www.hathitrust.org/access_use#pd-google
Digitized by Google
Original from UNIVERSITY OF MICHIGAN